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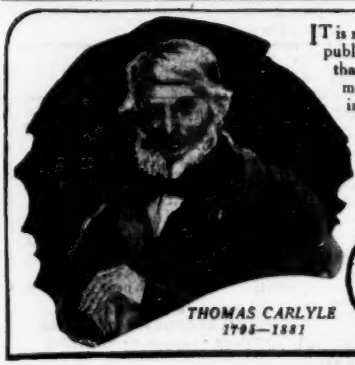

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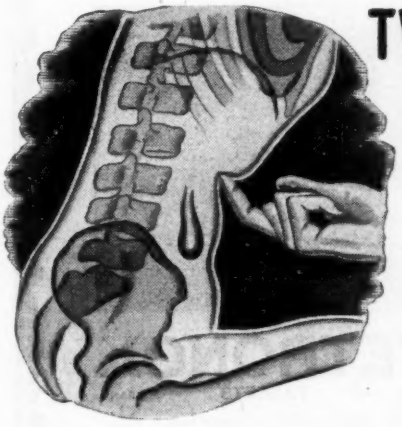

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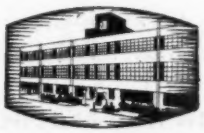

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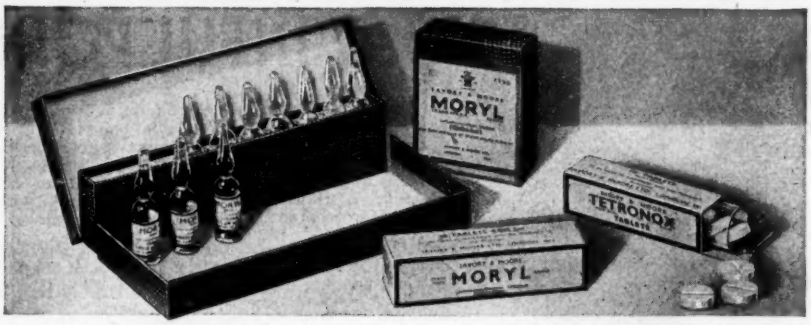

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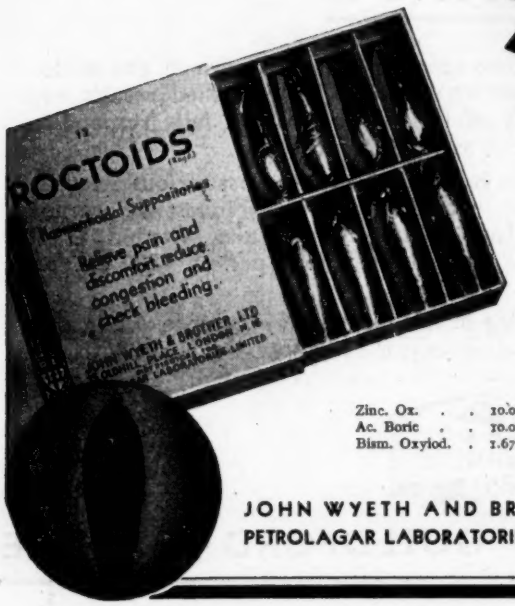
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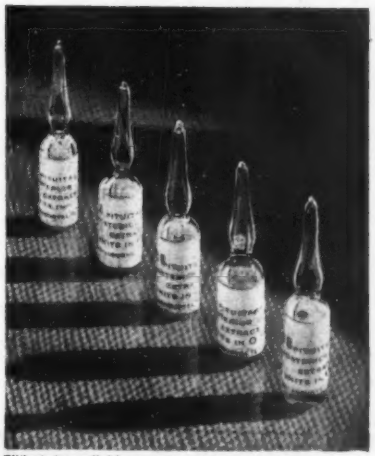

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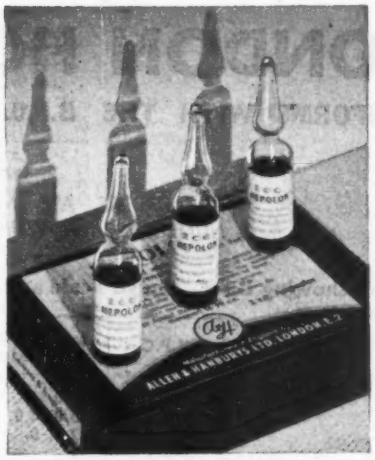

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The London Hospital Ligature Department

London, E.1, England

THE FILM IN MEDICAL EDUCATION*

I. PLANNING

CEDRIC J. LONGLAND, MB LOND., FRCS
RONALD MACKEITH, DM OXFD, MRCP

THE present great film industry has grown up out of the film's capacity to entertain. During its forty years, as it has increased in size and influence, there have been great advances in directors' filmcraft and in technical methods, and also the film has given us an important instrument for scientific research and a most valuable one for teaching. It may prove as important an advance in teaching methods as was the introduction of the printed book to supplement demonstration and the spoken word. The great value of the film as a rapid teaching agent has been demonstrated in the extensive use made of films by the Services and in factories here and in the USA. "Yet academical circles in England have hardly noticed this new weapon."[1] With the present shortage of teaching staff, the urgent need for doctors, which will not cease when the war ends, and the necessarily great length of the medical curriculum, such a useful teaching method should be neglected no longer. In brief, the method is available and the opportunity is here; it requires imagination and thought to bring to medical teaching the inherent benefits of the film.

PRESENT USE IN TEACHING

In 1938 the British Film Institute, who have done a great deal to advance the use of the film in education, sent a questionary to all medical schools in Britain asking for information about the use of films in teaching during the preceding year. The BFI kindly allowed us access to the replies, which give the only available picture of the use of films in this country.

Of the 10 London schools who replied, 3 made no use of films at all; the others used a few, chiefly in physiology, obstetrics and surgery. Of 8 schools outside London replying, 3 used no films. In Edinburgh and Liverpool a number of films in medicine, materia medica, orthopædics and surgery were employed; elsewhere their use was almost confined to physiology. Some medical schools did not answer the questionary. Some of the gaps have been filled by questioning people who were students at these schools. Their answers confirm the replies to the questionary—that very little use of films in teaching medicine was made at that time. Nor has there been any great change since 1938. After studying the replies one is left with the impression that not only is the film little used but that those teaching medicine show very little appreciation of its possibilities. The attitude of students questioned is the reverse of this. They are very interested and the few films they have been shown impressed them deeply. Postgraduate students are even more keenly interested in medical films.

Since there is a keen interest in teaching films among medical students, we will consider some possible explanations of the failure to use films.

1. *Lack of accommodation* is not a possible excuse; indeed many of the lecture-theatres in medical schools are provided with projection rooms.
2. *Expense* should not be allowed to interfere with improvements in teaching methods, for £200 for a first-class sound projector is a small item in equipping a medical school. At present projectors are difficult to obtain, but when the projectors used by the Services are disposed of after the war some should be earmarked for medical schools.
3. *Lack of time with present long curriculum.*—Films should occupy some of the time at present used for other teaching methods, and because the film is a very efficient method its use will lead to an economy of time.
4. "*The film cannot replace the teacher.*"—It is not meant to; to quote Prof. Winifred Cullis, "the film can supplement his teaching and perhaps stimulate him." We would put this more strongly, that the film gives the teacher a most valuable method of instruction.
5. *Inadequate supply of films.*—The films now available have two chief defects—they do not adequately cover the subjects of the curriculum and most of them are of poor teaching quality. But these defects do not explain the failure to make use of what good films are available.
6. *Difficulty in obtaining information about existing films.*—This is an urgent problem and is further considered below.
7. *Reluctance of teachers to change their methods,* chiefly perhaps because of a lack of appreciation of the value of the film for teaching.

The last two factors, and especially no. 7, are the chief reasons why films are so little used and hence are responsible for the poor demand for films which has been an important cause of the poor supply.

SUPPLY OF FILMS AND INFORMATION

It is impossible to give a complete survey of existing films on medical subjects, since many have been taken by private individuals and are not known about or listed anywhere. Several bodies in this country have collected information and from this it is clear that present resources are quite inadequate. But a list of films, even if all of them were available for loan or hire, which many are not, is of little value unless it gives information on the content and quality of the films. This is an essential for any useful catalogue.

Royal Society of Medicine (1, Wimpole Street, London, W1).—This summer the RSM have decided to set up a medical film library and Messrs. Kodak Ltd. have offered to hand over their medical films to it. The RSM also propose to make a catalogue of available films.

Scientific Film Association (c/o Royal Photographic Society, 16, Princes Gate, London, SW7, and 2, Newton Place, Glasgow, C3).—In November, 1943, the Scientific Film Association was started with committees in England and Scotland. Its aims are to promote the making and showing of scientific films and to collate and publish information on them. There is a medical standing committee with several subcommittees including one on medical education. Information is being collected with a view to the publication of a list of medical films criticised and graded according to content and merit. The SFA and the Scientific Films Committee collaborate on the viewing of films.

Scientific Films Committee (Association of Scientific Workers, 73, High Holborn, London, WC2) publishes a list of scientific films, all of which have been viewed by experts and graded. This graded list is revised regularly and supplements are issued between revisions. Detailed critiques of the listed films are also available. The list is useful but the number of medical films included in it is small, though there are biological films and some in elementary physiology and anatomy as well as health propaganda films and others on wider aspects of medicine such as nutrition and housing.

British Film Institute (4, Great Russell Street, London, WC1) published, in 1936 and 1938, two fairly comprehensive lists of British medical films, and one small supplement in 1940. Some of the films listed are not available for loan or hire; most of them have not been viewed by the BFI medical panel, and the list gives very scanty information of the content of the films, and no opinion on their merits. The value of most of these films for teaching is doubtful. Recently (1942) the films department of the British Council viewed some of the films but found none worthy to be sent to South America for showing to medical audiences and only half a dozen worth considering for re-editing.

British Medical Students Association (BMA House, Tavistock Square, London, WC1) in July, 1944, made a comprehensive list of films on medical and allied subjects. This includes no grading of the films for content or merit.

Central Council for Health Education (Tavistock House, Tavistock Square, London, WC1) publishes an up-to-date list of health propaganda films with fairly detailed notes on their content and suitability.

Central Film Library (Imperial Institute, South Kensington, London, SW7), an official body, houses the Empire and GPO film libraries and the films made for the Ministry of Information and the British Council. These include various health propaganda films and the medical films made in association with the Ministry of Information.

* Report submitted to Medical Planning Research.
1. Annotation in *Lancet*, 1941, ii, 569.

Scottish Central Film Library (2, Newton Place, Glasgow, C2) has a large library of educational films in addition to copies of those in the Central Film Library, but there are few medical films in this collection.

Films Committee of the Physiological Society of Great Britain (secretary, Prof. J. Yule Bogue, Haycroft, Hartley Road, Altrincham, Cheshire) has a film library which is used by departments of physiology throughout the country.

GBE (Gaumont-British Equipments, Tower House, Woodchester, near Stroud, Glos.) have a number of films in elementary sciences, including a series covering the biology syllabus for medical students.

Kodak Ltd. (Kodak Works, Wealdstone, Harrow, Middlesex) have been furthering the use of 16 mm. medical films for over 15 years and have established libraries in Bombay and Capetown. The Kodak library of medical films, some of which are very good, is still open and issues a catalogue.

The Services.—According to Cameron,[2] "great use is made of colour films in training the newly commissioned army medical officer." This is probably true to a greater extent of the US Army. These libraries may be a useful source of films, but little information about them is at present available.

Other Sources, such as Technical Products Ltd., British Commercial Gas Association and many private owners of films are to be found in the SFC, BFI and BMSA lists, but there are also many films not included in any of the above lists.

As to subject matter, the largest number are on surgical subjects; but, taking figures from the BFI list to illustrate the point, 62 of the 64 films listed are records of operative procedures, and only 2 give a wider view of their subject, by including anatomical, clinical and surgical aspects. The teaching value of most of these films is very limited, since many of the operations filmed are chiefly of postgraduate interest. In medicine half the films listed are on neurological subjects, but even so, such important subjects as cerebral tumour and syphilis are scarcely represented (and what a valuable film could be made on the subject of aphasia!). In obstetrics, judging from titles only, for we have been unable to view more than a few of the films, there appears to be a fairly useful selection. Public health and hygiene films are in fairly good supply. These films have been made for laymen, but they have an emphasis on the preventive applications of medicine in child health (e.g., "Defeat Diphtheria"); in industrial medicine (e.g., "Men in Danger"); and in sanitation (e.g., "The Filter," "Housing Problems"); and their use would interest the student in a subject which has been rather treated as a step-child despite the lip service that has been paid to it.

The biology films include the solitary but shining example of a series of good films planned to cover one subject—the Gaumont-British biology films. Anatomy and physiology have only a few elementary films available, with the exception of the Harvey film on the circulation of the blood, belonging to the Royal College of Physicians.

To sum up, medical films at present constitute a small set of haphazard illustrations which only deal with a small part of the ground there is to cover. Too many of the films have been made by specialists wishing to record some special point or procedure, and hence these films, lacking context and continuity, are only of restricted use for students or for doctors in other branches of medicine. Many of the films are of poor teaching quality. Film-making is a highly skilled affair and the specialist in medicine, when he has an idea of what he wants a film to show, should get the help of an expert in film-making, and preferably of an expert in making instructional films. There is difficulty in obtaining information about films and about their content, their suitability and their distribution; here the lists of the SFC, the SFA and the RSM will be valuable. There are no central distributing agencies to facilitate the supply of films, though the Central Film Library is acquiring an important collection and the RSM medical film library should be most useful.

2. Cameron, W. M. *Brit. med. J.* 1942, 1, 230.

MEDICAL FILMS ABROAD

There are far more medical films available in the United States than in Britain. The American College of Surgeons publishes lists of approved films, both medical and surgical (2500 to 3000 films have been viewed and 600 films with a total of 650 reels have been approved). These lists give no details of subject matter. The Wistar Institute in Philadelphia publishes reviews of anatomical and biological films. The Biological Photographic Association publishes annual reports on biological motion pictures. Some pharmaceutical firms and some film companies publish lists of films. The medical journals contain frequent references to films. For example, the *Psychological Bulletin* in 1938 and again in 1942 included "A review of 16 mm. films in psychology and allied sciences" by L. F. Beck. Two years ago the Health and Medical Films section of the American Film Centre was started to promote the film in medicine. In June, 1942, after a conference held under the auspices of the American Medical Association, a committee on motion picture in medicine was set up to coördinate activities. From the report of this conference it appears that the supply of medical films in the States suffers from defects similar to those noted above for this country. But we could get many very useful films from the USA. A similar committee is urgently needed over here.

An effort in the direction of international coöperation was made some years ago, when in 1928 the International Institute of Educational Cinematography was founded at the suggestion of the Italian government. Among other things it conceived the idea of compiling a ciné-medical encyclopædia that would demonstrate in about 100 films the best practice in medicine, surgery and public health to medical practitioners and students. Through the Health Organisation of the League of Nations, the member states made inquiries in their own countries as a preliminary to the selection of the best films. The scheme collapsed when Italy left the League, but the League made a valuable contribution in 1933 when after a conference it was arranged to remove customs duties on films certified as of educational character, though many countries, including it is believed Great Britain, did not ratify the agreement, and medical organisations in these countries have therefore not been able to secure benefits from the League of Nations' proposals.

In the last months a few science films have arrived from Russia. There are a few French films on biological subjects available.

HOW FILMS COULD HELP IN MEDICAL TEACHING

It is difficult for those of us who have not been taught with films to visualise their full scope and the considerable influence on medical education which their use is likely to have. The best way to get an idea of the possibilities is to see a good medical film such as "Malaria," made in 1941 by Arthur Elton and Grahame Tharp with the Shell Film Unit.

The film is an extension of the eye and so "presents reality in a readily received form and especially with the help of sound it can concentrate attention to the fullest." The sound film is the most potent force for the enlightenment of the man in the street who *can* read but does not easily learn by reading. To say that the medical student has learnt to study from books is to disregard the special qualities of the film. "It can take the audience to any place or object and can show relations difficult to convey otherwise; it can give to the space and time dimensions whatever values are best (by using distant views, close-ups or microscopy on the one hand, or speeding-up or slow-motion on the other). Where a dynamic process needs to be taught, the moving film is essential; no blackboard diagram, no lantern slide can take its place" (from the SFC Memorandum on the Scientific Film). Cases of chorea and athetosis may be brought together before the student at any time. The injured man can be followed from the dangerous condition of his work, through his treatment and rehabilitation to the goal of full working ability. The growth of tissues in culture can be made vivid and real by speeding it up, at the same time as it is magnified. For the medical student the film is especially useful because by combining seeing and hearing (or reading) it

prevents knowledge being acquired in words alone. The present system of teaching medicine depends too largely on remembering words, and most students memorise better on a visual basis.

The film is not a perfect extension of the eye. As Lauwerys points out, a very complete picture may be made from which the student may draw his own conclusions, or a more abstracted one involving some incompleteness and distortion but making the generalisation more obvious. Prof. Winifred Cullis suggests that the fact that a film has more in it than can be assimilated at its first showing is as a rule a good quality.

The use of fast and slow motion, colour, animated diagrams and graphs; the use of skilful cutting or the inclusion of dramatic episodes to drive points home; the avoidance of possible by-effects of badly arranged photography are all aspects in the province of the skilled film director. Animated diagrams will be a vivid and useful feature of most films.

There has been some controversy on Sound *v.* Silent films for teaching. Silent films are cheaper and easier to make and to show; they are certainly adequate for many purposes and many teachers at present prefer to make their own commentary or lecture. One of us feels strongly that it would be unwise to plan chiefly for silent films for economy or any other reason. In certain cases sound is essential—imagine a film on physical examination of the heart or lungs—and the combination of sound with sight makes for a more vivid impression. Sound films may be run silent,[3] either for the teacher to make his own commentary or for a student to run it through on his own when revising. The student who is used to the highest standards of movie production may object to instruction by what he feels to be an old-fashioned type of movie.

We do not claim that after sitting through a cycle of film shows students will automatically become wise doctors, only that the film is a stimulating and time-saving teaching method which will help the student to get hold more quickly and more securely of the immense amount he has to learn. One cannot lay down rules as to how films are to be used. Some will be run through, discussed and run through again. Others may be stopped at intervals for elaboration of one diagram or picture. To get the best value from films they should be available for the individual student to run through for revision at his own pleasure, either on the classroom projector or on a simple viewing apparatus. In the latter case he may have to do without sound but an occasional subtitle with a handbook would make a sound film easily understood. Films are expensive and easily damaged by inexpert handling, and the casual issue of films might be impracticable. The best way would be to arrange that film projection facilities should include projection to small groups of students (say 3–10) who make a concerted request for a given film.

For postgraduate teaching films would certainly be welcomed by a group most of whom are at an age when learning is less easy. The film is especially useful because it can be duplicated and shown to a large number of audiences, who may not easily get to London for a course.

There are foreground films which demonstrate clinical pictures or show "how-to-do-it"; and there are background films of wider scope correlating various facts to establish larger principles or to show relationships of medicine to other fields. But it is a cardinal advantage of the film that these two aspects can be combined. Up to now there have been too many films of restricted scope. Elton and Tharp's "Malaria," and Rotha's "Blood-Transfusion" are examples of the good use of the wider treatment possible.

SUGGESTED PLANS [4]

To bring progress to the present rudimentary and haphazard methods of using medical teaching, information, coördination and guidance are needed; not just more and more films. Film production by many different bodies seems desirable. For example, if the different universities and medical schools were encouraged to make (or to have made for them) their own teaching films, competing in quality, but not for subject matter, with those of each other and of other bodies, a variety of excellent films should result. By contrast, information about existent films and about the technicalities of their production, coördination of proposed film production and guidance as to the films most urgently needed should come from a central body, and it is here that should be housed the comprehensive central library.

The fuller use of films in medical education requires planning if waste of effort is to be avoided. There should be a central coördinating body for the film in medicine with medical education as one of its chief interests. The guiding principle of the central body must be to exploit and develop the film in the interests of medicine. It should include representatives from the Royal Colleges, the MRC, the medical schools, the RSM, the SFA medical committee, the BFI, the SFC, the Physiological Society, the British Council, the Ministry of Health, the Ministry of Information (a very important film-making body at present), some of the leading documentary producers, and representatives of commercial producers specialising in instructional films and the associations of cinema technicians.

Possibly the Royal Society of Medicine and the SFA medical committee, which is already in existence with a wide range of representatives, will between them set up this necessary coördinating body. Some of its functions would be the following.

Information on medical films.—A catalogue of available films should be prepared (and kept up to date) with notes on the films' content and qualities. The experts' detailed critiques should also be available, giving reports from the medical and cinematic standpoints with special reference to teaching qualities and perhaps suggestions from the expert viewing panel. Films made for teaching will in most cases have an accompanying pamphlet of teaching notes. The graded list and detailed critiques of the SFC and the film reviews of the BFI and of the Scottish Educational Film Council may be taken as examples. The SFA has issued a memorandum on the viewing of films.

Coöperation with other countries.—The Central Body would coöperate with similar bodies in USA, USSR and other countries, exchanging information and films, possibly in conjunction with the Health Organisation of the League of Nations.

Guidance in production of new films.—Many medical teaching films will probably be made in the next few years. Coördination is necessary to avoid duplication. Furthermore, medical teachers and specialists must say on what subjects films are most needed. Would-be producers should be able to get technical help from specialists in medical and film worlds. Advice could be given on submitted scripts, but the production of a film should be in the hands of an individual, not of a committee.

WHO IS MAKING FILMS?

Making medical films is a job for the best medical teachers and the best film directors, with where necessary the full resources of a big studio.

The production of good films can be expensive, especially if sound is to be recorded. (*a*) The films made by individual enthusiasts often suffer from defects due to inadequate technical resources as well as to lack of specialist experience. (*b*) Other films have been made for their prestige value by commercial bodies with large resources—"Malaria" by Shell film unit, the nutrition film "Enough to eat?" for British Commercial Gas Association, the anæsthetics films of ICI, and so on. (*c*) Commercial production provides some more—e.g., those of Kodak and Gaumont-British Equipments. In a few cases GBE make a theatrical version of a film, for wide distribution in cinemas, from the instructional version. But a large number of films are made for instruction only, and GBE have found that in peacetime, with overseas sales, a first-class instructional film is commercial to produce, though it takes time to show a profit and the film must be good. At the moment the Government-sponsored films, made by the films division of the Ministry of Information and for the British Council, are providing some excellent new medical films.

From these various sources, with the increasing interest in films, it should not be difficult to get a useful

3. It should be remembered that sound films *cannot* be run silent in a silent projector.
4. In writing this part, the report of the Conference on Motion Picture in Medicine held in USA in June, 1942, has been of great value.

number of medical films made if overlapping is avoided. If the production of a number of first-class films is continued for a time, as appreciation of this teaching method spreads a large and world-wide circulation will be reached, and then there should be less difficulty in getting the films produced commercially. But while the market for, say, biological films may be large and remunerative, it is unlikely that it will be commercially profitable to make good films for the smaller more specialised audiences. These films are needed and under the stimulus of war it has been found worth while to lay out public money on them. If, as is contemplated in the Goodenough report, £2,000,000 is spent on assisting medical education, it would seem justifiable to set aside a fiftieth part of this sum for medical films, to be made by a variety of agents including the universities and other medical bodies as well as by the Ministry of Information and British Council whose present output justifies their continuing to make films after the war.

An increasing demand will lead to the setting up of regional medical film libraries, probably in the university medical schools in conjunction with their present book libraries. The Royal Society of Medicine, which has the best medical library in Britain, might well, in conjunction with the Central Film Library, form a central medical film library, coöperating with the regional libraries.

The British Film Institute, the Scottish Film Council and the Film Council for the South-West have done a great deal to promote the best use of films in teaching in schools. Their application in teaching medicine would repay study. It is also necessary to induce "teachers of medicine to realise the value of motion pictures." The only way to introduce films into medical teaching is to plan at first for them to supplement present-day methods. Any more grandiose scheme will not get anywhere. The medical student and the postgraduate student are very keen, and not only for any novelty value that lies in teaching films. The method and the opportunity are here. Any time devoted to thought and imagination about the use of the film in teaching medicine will be well spent.

II. PRODUCTION AND SCOPE

BRIAN STANFORD, MRCS, DMR, FRPS

ONCE it has been decided that a film shall be made, someone must be found to make it. The persons available can be divided into amateur and professional, and both have been used successfully.

CHOICE OF UNIT

Most of the films made in hospital before the war were made by students or technicians who had a knowledge of photography and found a progressive teacher to provide the small funds they needed. These films were usually accurate, but for the most part taken without a script prepared beforehand, and with very rudimentary lighting technique. Hence they were often difficult to understand, and so came to be regarded as a waste of money. Occasionally a really useful film was prepared, but they were so rare that they tended to be forgotten, the more easily because films were not a routine medium for teaching. Sometimes the teacher planned the film and got someone to make it for him—Messrs. Kodak's medical unit did useful work in this way—but they were to some extent limited by the instructions given them, and could not often take responsibility for the plan of presentation of the film. Within the last year skilled advice has become available to the enthusiastic amateur film-maker. The Association of Scientific Photography (Tavistock House North, Tavistock Square, WC1) is forming a clinical section and will give advice on technical problems of cinematography, and the Scientific Film Association will advise on, or refer to suitable professional units, requests for help in preparing scripts or in editing films; so the simpler amateur productions will in future be able to compare favourably with the professional.

The presentation of a film is of paramount importance. A film can be absolutely flawless so far as its facts are concerned, and can be well lit and photographed correctly, and yet be difficult to understand or boring to watch. In either event it is a bad teaching film. It is here that a professional unit scores. The director of the unit has spent years learning and practising just that—how to present subject matter so that it holds the attention. Even a prosaic description of a routine technique can be presented so as to fire the imagination and be beautiful to watch; such a description will be remembered. Even a medical subject can be æsthetically pleasing, as witness the sequence where a bronchoscope is passed in the half-darkened theatre in "Surgery in Chest Disease." Again, "Open Ether Anæsthesia" was a first-class film throughout; at the end one's æsthetic sensibilities had been pleased as well as one's knowledge increased. It seems likely that only a professional unit with experience of other work can produce films of this quality.

There are several film units which have already made medical films; most of them are small ones specialising in the presentation of documentary films. (They can be contacted either through the Films Division of the Ministry of Information or Film Centre Ltd.) Such units collaborate with the doctors, prepare a script with them, and then, when the script is agreed to, go ahead and shoot it, preferably without interference. The director then assembles and edits the shots and presents a finished film to the doctors for approval or minor alterations. This is very satisfactory so long as the film deals with subject matter which the director can understand himself; he then passes on his newly acquired knowledge to the students via the film. But there must come a stage, for example in a complex operation, where his knowledge cannot be adequate. He must know the full significance of the operation, the disposition of the various structures; he must be able as the operation advances to foresee what will happen next, what minor variation may be expected and must be prepared for. And if something unexpected happens he must be able to take immediate advantage of it on his own initiative. Only a doctor can do this, and so it follows that at times a doctor must be in full direct charge of the unit. The surgeon performing the operation cannot do this because he cannot project his eye into the viewpoint of the lens; and his main, in fact his only, concern will be for the patient, especially in moments of stress. It is often just those moments of stress—the tricky parts of the operation, the swift movements, the deep manœuvres—that are most required to be portrayed in the film. The difficulty has been met by operating on a cadaver, but the results were not sufficiently convincing, partly because of the absence of flowing blood, and partly from the loss of elasticity of the tissues, which is obvious even on the screen.

So we see that just as no doctor has sufficient experience of films to enable him to direct with professional film skill, so no director has sufficient experience of medicine to enable him to direct with professional medical skill. Yet it would be just as foolish for a doctor to attempt to learn film-making as it would be for a director to learn medicine; in both cases the training is too long and the experience of constant practice is required. The solution surely lies in a doctor-director-technicians team working together as a permanent stable unit, each member with his sphere of influence clearly defined in theory. The team should be small, perhaps only four persons; mobile, perhaps shared by several hospitals; and able to undertake any kind of medical work whether straight, instructional or propaganda. They should not confine themselves exclusively to medicine, but by taking out occasionally into the general run of films some of the precision they have learnt in medicine they will contribute to the general trend of film-making and bring advances back with them into medical films.

LOCATION

If the subject matter of the film and necessary accessories can conveniently be taken to the studio this should be done. It enables a more stabilised set-up to be maintained, and a greater sense of continuity results. A series of films on allied subjects, taken under the guidance of different doctors, can be more uniformly presented, and the director and his assistants, working "at home," will produce a smoother film.[1]

1. It is not generally realised how much lighting is used high up round the margins of the set from specially constructed galleries. This lighting technique is impossible in most hospitals, and films taken there will suffer accordingly.

If it is necessary to go "on location" to a hospital it is an advantage to have a ward set aside for the unit, in which the patient can be placed and properly lit, and other patients added to give atmosphere when needed. It is advisable to work mainly by electric light, even in an operating-theatre capable of being fully flooded with daylight. Continuity may at any time require a repeat take under adverse weather conditions, and controllable lighting has become an accepted convention even for outdoor shots; there is no excuse for adopting daylight on ground of expense. Even sequences showing limb movements or posture when walking, which could justifiably be taken outdoors, should be taken under studio conditions to concentrate attention on the subject.[2]

Scope of a Medical Film

Medical films can be divided into three broad classes, according to the audience for whom they are planned—(*a*) medical students or medical auxiliaries; (*b*) post-graduate doctors; and (*c*) the general public. Each of these audiences may be addressed from one or two viewpoints: (i) factual instruction in established technique (teaching films); and (ii) presentation of suggestions or broad ideas (propaganda films). There is an immediate unlimited need for medical instructional films for all three classes of audience; for medical students now, for the general public of Europe in the days of liberation, and for the doctors disbanded from the Forces. These films, meeting present-day needs mainly as instructionals, will need to be followed not only by further instructionals addressed to students and doctors as technique advances but also by propaganda films addressed to the public to enable them to appreciate the strides made in medicine, and to encourage them to use to the full the preventive medicine facilities which will be available under a new health scheme.

TEACHING FILMS

Any medical teaching film must be prepared to answer the question: "Could this demonstration have been made just as effectively on the subject during the training of the student." If the answer is 'Yes' then the film should not have been made. The medical film, like any other instructional, must constantly exploit its peculiar advantages to the full—its advantages in time, space and scale, as well as its advantages as a permanent record. If it does not need to do so, then it is redundant.

For medical students and medical auxiliaries.—There has been since the outbreak of war a new factor in the training of students. The dispersal system of our hospitals is so arranged that the student cannot follow a patient through from arrival in the outpatient department until his return home. He sees outpatients at one stage of his training in one hospital, operations at another, and convalescence at a third. There is thus a need for films showing a "normal" progress of a patient through a few typical common diseases, with stress laid on continuity of treatment, to undo the inevitable impression that the progress of disease is marked by clear-cut stages. It is probably this apparently disjointed treatment scheme that has led to the recent stress on the need for rehabilitation; a discovery that discharge from hospital is only an arbitrary stage in the course of an uncompleted return to health.

After the war the medical instructional film addressed to students will play an increasingly important part in in his education. For example, it is becoming widely agreed that only one student can observe with benefit any one operation. Good films taken of routine standard operations can be projected at leisure and commented on fully during the projection; and tedious and time-consuming repetition of the technique adopted in opening and closing the abdominal wall, common to many operations, should be made the subject of one film and omitted from all others, and more time given to the actual local technique. Colour film in universal use will do away with the main bar which has existed hitherto to the use of films, and it is to be expected that stereo projection of operations will become a commonplace.[3]

For postgraduates.—Most doctors now in the Forces are discovering for themselves new techniques to deal with new spheres of human disorder, and are forgetting their peace-time requirements. The film cannot easily reach them, scattered all over the world, but a few specialised training films were prepared for them when they joined up. The Forces are progressive in their use of instructional films for their own immediate needs, but there is scope for interchange of films between the medical corps of the various branches, and the several allies.

Doctors returning from the Forces will want to see all the films prepared for students. But they will also want some films taken especially for themselves. A considerable proportion of the younger men will want to see an exposé of the specialist activities open to them and of the facilities available for training. There is a great dearth of specialists, and a series of films written each by a specialist with the object of attracting doctors into his own specialty would help the doctor in his choice when he returns. Training back to civilian practice will not be so easily helped by films, since it is the art rather than the science of medicine which tends to atrophy with disuse, and the art cannot be taught by an instructional film.

For the general public.—For the relief organisations preparing to go to liberated Europe there is an urgent need for films on elementary field hygiene[4] and the training of medical auxiliaries. In general the refugees in this country will provide a nucleus of skilled doctors, but they will be busy doing medicine on arrival and will have little time to train orderlies and lower grade assistants afresh; yet a large amount of the routine work must fall to such persons, who are now ignorant of scientific medicine. While the doctors now in Europe will have to relearn parts of their skill by working with those doctors now preparing to go over with the relieving armies, the orderlies could be trained by films, which should demonstrate the theory underlying the practice, for there will be no dearth of willingness to learn intelligently rather than by rule of thumb.

In England the general public is largely ignorant of medicine, and it has been suggested that the profession purposely keeps it so. To this the profession replies that if this is true it is in their best interests, since the public must not be frightened. But the degree of fright which the public takes at medical matters largely depends on how far they have been educated in such things. Elementary instruction in, for example, cancer, along the lines of the films now issued on VD or tuberculosis, would bring many cases to the doctors at an earlier stage of ill health; this should be prepared now, for the Cancer Act will enable much better facilities to be offered for treatment as soon as the war stops. Again, a series of films on elementary hygiene, widely displayed, would prove a fine investment to a community now contemplating a free medical service for all. And even elementary expositions of the physiology of the eye, the ear, or tactile sensibility would be widely acceptable to the general public, as is shown by their interest when presented with these subjects as VADs or at first-aid classes. Progressive medical opinion is taking an interest in these possibilities (vide Professor Ryle in the *Lancet* of June 3, 1944).

2. "Intravenous Pentothal" (part II) suffered in comparison with "Open Drop Ether" from a mixture of electric and daylight shots. The soft tone-range of the electric shots showed up even more than usual the harshness of the uni-directional daylight scenes taken in the theatre which were cut in with them. This distracted attention from the information the film was presenting as well as offending the æsthetic sensibilities. I can offer no modern examples of orthopædic films taken outdoors, but remember well films taken privately "in the hospital grounds," where undivided attention on the limb movements of the subject was impossible owing to a changing background of drains, windows and tree-trunks.

3. It is in small groups, of some 20–40 persons, that stereo-projection with the use of polarising spectacles has its maximum efficiency. These spectacles, or any other equipment which new cinematic techniques may require, may be loaned or hired out by the medical school much as they now provide microscopes.

4. A film should be made on the effects of nutritional disturbance on adults and children. This will be correlated with the material which will later exist for demonstrating the effects in adult life of starvation in youth. A script on this subject should be prepared now, and not left to be made up years later from the editing of newsreels and private films.

PROPAGANDA FILMS

Under the heading of propaganda come the films which not only demonstrate facts but also plead a cause. One series that immediately comes to mind should be made by Parliamentary parties and medical bodies to demonstrate and argue the case for their version of a suitable National Health Service; and the campaign just suggested for improving the general knowledge of the public could also be classed as propaganda. But other fields lie open: the requirements of a tuberculosis scheme, the positive health aspects of regular exercise, the value of routine individual medical examination, the danger of patent medicines, or the value of a food distributive trade trained in hygiene. Again, a factual presentation of the value and drawbacks of milk pasteurisation would give the public a clearer view of the issues at stake.

It is hard to say where factual presentation stops and propaganda begins. A subject which is factual to a believer is propaganda to a non-believer. But propaganda need not even be open, it can be veiled, and it is here that the choice of director and script-writer becomes of supreme importance. The documentary film profession are imbued as a whole with a strong sense of civic duty, and will not produce a film in which they do not believe. If a unit strongly in favour of, say, state medicine were to be asked to make a film putting the case for private practice they might refuse altogether; or they might make it in spite of their feelings. But if they did the film would probably not be convincing, even though the script was; by subtle shades of acting and cutting the whole argument can be nullified, and yet the sponsor be unable to say where the reversal of argument has taken place. But if the right unit is chosen, the film can be shattering in its power of argument, as was *World of Plenty*.

To what extent may one misrepresent or omit in order to convey a message? This problem has to be faced afresh each time, and parties with different interests will come to different conclusions. It is for this reason that some organisations have felt the need for appraising films, and have issued lists of those they recommend. The most important of these is the film appraisals subcommittee of the Association of Scientific Workers, which views all films having a scientific basis to decide whether they are scientifically accurate. This organisation however views its films from another aspect also; whether the film has a message in keeping with the trade-union policy of the association. The Scientific Film Association, which also appraises films, has no such political criteria.

The misrepresentation of truth may be intentional, or it may be accidental. A committee of doctors who have prepared and approved a medical film which is accurate from their viewpoint may not notice its inaccuracy from another viewpoint.[5]

Another form of propaganda is one which exaggerates. For instance, a film describes a successful local experiment in terms that suggest it has been widely adopted; this is a fault which we have seen in films concerned with child education, where the sponsor writes his script full of aspiration for the widespread adoption of his scheme, but has only one school which reaches up to his standards. His argument would not suffer if he made it clear that this was only a report on a successful experiment which should be applied generally; and the general validity of the film would be greatly enhanced. There is some evidence that the new films on rehabilitation may suffer from a similar exaggeration. It cannot be condoned, yet it undoubtedly helps to create a demand for widespread adoption of the scheme portrayed. Whether the end justifies the means is open to argument.

5. *Surgery in Chest Disease* was prepared for the British Council to demonstrate to doctors in other countries the high standard of interdepartmental coöperation required in the treatment of a patient. That it did excellently. But it also conveyed the impression that here in England we have reduced to a minimum the dangers of lung cancer by skilled surgery. Nowhere in the film did it mention that only one in ten of these cases are suitable for operation. Again, *Defeat Tuberculosis*, which was intended for public showing, illustrated accurately a method of treatment for advanced tubercle. But it left the lay audience with the impression that this was the usual method of treatment for all cases, whether advanced or not, which is not so.

CARBON TETRACHLORIDE NEPHROSIS

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THE following cases of acute renal damage, resulting from the amateur use of carbon tetrachloride for cleaning clothes, are reported not only for their clinical interest but also to emphasise the dangers of this agent.

COURSE OF EVENTS

Three French petty-officers, all members of the same mess in a Fighting French submarine depot ship, were admitted to a Royal Naval hospital during the first week of January, 1944. Subsequent inquiry showed that in the previous October someone in the mess had discovered the virtues of 'Pyrene' fire-extinguisher fluid (almost pure carbon tetrachloride) as a remover of grease and oil from clothes. All the dozen or so men in the mess were engaged on engine repair or similar dirty work, and their clothes naturally got extensively soiled. They all fell into the habit of giving their clothes a regular dry-clean about once a week, applying the pyrene fluid to the garments with a rag. In this way they used up two refill tins (about 4 pints) in about three months. All this cleaning took place in a cabin about 25 ft. by 10 ft., ventilated by a door and five scuttles. Bearing in mind, however, the fact that it was an English winter, whose chills and vapours are not popular with a nation unaccustomed to them, it seems not unlikely that this ventilation was seldom in action.

Nothing untoward occurred at first, and the amateur dry-cleaning proceeded apace until about Christmas. At that time some of the men were taken ill with symptoms of headache, general malaise, backache and vomiting. There was a good deal of influenza about, and they were diagnosed as suffering from this complaint. Most of them recovered satisfactorily after a week or two on the sick list. One man, however, had other symptoms in addition to those described.

CASE 1.—This man complained of extreme anorexia and thirst, and stated that he had attacks of double vision. Finally, on Jan. 5, he had a sudden severe epileptiform seizure, and was at once admitted to hospital. During the next 48 hours he lay in a state of restless coma, punctuated by frequent generalised convulsive fits. Urine analysis revealed a heavy albuminuria, with abundant leucocytes and red cells, but no casts. A clinical diagnosis of uræmia was confirmed by the finding of a blood-urea of 356 mg. per 100 c.cm. Under treatment with sedatives and intravenous alkaline fluids the patient improved, ceasing to have convulsions and becoming fairly rational and coöperative. But soon it became manifest that pulmonary œdema was setting in, and the left side of the heart began to fail. In spite of all efforts he died from heart-failure, mentally clear to the end, on Jan. 11, 6 days after admission. At no time during his illness was there jaundice, nor was his liver palpable.

Meanwhile, on Jan. 7, two of this patient's messmates had been admitted to the same hospital ward. Both of them had been ill for several days, with the prevailing headache, anorexia and vomiting (case 2 had slight hæmatemesis) and in addition had been observed to have albuminuria.

CASES 2 and 3.—Clinically, the two men seemed to have typical, moderately severe acute nephritis. Their urine contained albumin, numerous red cells and leucocytes, epithelial cells and granular casts. Case 2 was the more ill, having, in addition to a degree of renal uræmia, considerable functional azotæmia due to dehydration from prolonged vomiting. His blood-urea at one time reached the extraordinary figure of 746 mg. per 100 c.cm., urea-clearance being reduced to less than 10% of normal function. In spite of these alarming laboratory findings, his clinical condition never suggested uræmia, and he was never drowsy or mentally abnormal. With appropriate treatment, as for acute nephritis, including ample fluids, he improved steadily; the blood-urea and urea-clearance figures became normal, the urine cleared up completely, and after 46 days in hospital he was discharged to sick-leave, apparently cured. Case 3 was not severely affected, his blood-urea never rising above 120 mg. per 100 c.cm. He also improved steadily, and left the hospital, apparently recovered, after 25 days.

At no time during their stay in hospital did either of these men present any clinical evidence of liver damage. They were instructed to report in 3 months' time for re-examination to determine their fitness for further submarine service, but they had meanwhile sailed for the Mediterranean.

During the time the 3 men were in hospital, although some toxic cause for their illness was suspected and steps taken to exclude poisoning by metals such as lead, the real agent was not discovered. This was because the history of exposure to carbon tetrachloride was not then forthcoming, and because there were no signs of liver damage. It was not until the kidneys of case 1 had been examined histologically that the sinister influence of carbon tetrachloride was suspected.

POST-MORTEM FINDINGS IN CASE 1

Autopsy by Surgeon Commander T. W. Froggatt, R.N, elicited the following significant facts:—

Heart: dilated; right side distended with blood; cloudy swelling of myocardium. Lungs: intensely congested and œdematous in all parts. Liver: nutmeg appearance; microscopy revealed severe central lobular necrosis, with very little associated fatty degeneration. Kidneys: large, swollen and pale; subcapsular surface smooth; cortex pale; medullary portions dark and congested. The left kidney weighed 9·5 oz., the right 8·5 oz.

Sections of the kidney were sent to Dr. W. W. Woods, consulting pathologist to the Navy, who reported as follows:—

There is no sudanophil fat, but there is severe albuminous degeneration, particularly in the first convoluted tubules. In some of these tubules the appearance is that of ordinary severe albuminous degeneration (cloudy swelling), the cells being very swollen and bulging into the lumen. In others, however, there is a suggestion of a rather different change because the tubules are dilated and the cells small, indicating regeneration, although no definite karyokinesis could be seen. This change is severe in some of the second convoluted tubules, where the epithelium is no more than a flattened rim about the lumen, and there is pyknosis and karyorrhexis. There is albuminous degeneration of the parietal epithelium of Bowman's capsule and a good deal of granular debris in Bowman's space. The glomeruli themselves are normal. In the lumen of the first convoluted tubules there is much granular debris, perhaps an exaggerated amount of what is ordinarily seen in cloudy swelling. But in the second convoluted and in the tubules of the medulla there are granular casts made up of minute eosinophilous bodies which are evidently shrivelled red blood corpuscles, and there are brown granular casts of altered blood. In the middle and upper parts of the medulla there are areas of congestion, rarely hæmorrhage, and in most of these areas there is inflammatory infiltration with lymphocytes and plasma cells which may be classed as histiocytes, though some of them suggest hæmocytoblasts. In some of the congested vessels in these areas of inflammation there are numerous lymphocytes and large round cells in the blood in the lumen. There is slight focal fibrosis in the cortex, but I think this is an old change of little importance and not related to the fatal illness. In a few arcuate veins there is a slightly organising thrombus. There is slight hypertrophy of the intima of the arteries, but no definite hypertrophy of the media.

Conclusions.—The renal and hepatic changes are in keeping with chemical poisoning. The fact that other men in the ship had a similar illness suggests the possibility of poisoning by a volatile chemical, possibly carbon tetrachloride from pyrene fire-extinguishers, or methyl chloride or methyl bromide from a refrigerator out of order.

DISCUSSION

Carbon tetrachloride is widely employed in industry as a solvent for gums, resins and fats, for dry-cleaning clothes, and for removing oil and grease from machinery. Its uses as a fire-extinguisher and as a vermifuge for ankylostomiasis are well known. Its toxicity, both in liquid form and when vaporised, has been attested by many reports of accidental poisoning, some of them fatal. Carbon tetrachloride is probably even more toxic than its near relative chloroform; and being a heavy gas when vaporised (5·3 times as heavy as air) tends to accumulate in dangerous amounts in the lower parts of rooms when ventilation is inadequate. Thus 1 c.cm. of liquid carbon tetrachloride yields 257 c.cm. of vapour at room temperature, and 5000 parts of vapour in a million parts of air is recognised as the minimum concentration required to produce toxic symptoms.

Its toxic action on the liver is well known, but the effect on the kidneys is perhaps less widely realised though cases of toxic nephrosis have been reported. Boveri (1929) described the case of a young man engaged in cleaning greasy clothes in a small room; after exposure to the vapour continuously for two days he developed jaundice and nephritis, but recovered. Other cases of renal damage from the use of carbon tetrachloride for cleaning purposes have been recorded by McGuire (1932), Franco (1936) and Smetana (1939). Dudley (1935) described four such cases in men exposed to the fumes of pyrene extinguishers, used in confined spaces aboard ship for putting out fires. Other writers have reported similar renal poisoning arising from other uses of carbon tetrachloride.

Pathology.—The changes found at autopsy in case 1 are fairly typical of those commonly found in cases of fatal poisoning. The brunt of the attack is borne by the liver, where central lobular necrosis is found, and by the kidneys, where necrosis of the tubular epithelium, especially that of the first convoluted tubules and of Henle's loops, is the rule (Smetana 1939, Ashe and Sailer 1942). In addition, a varying degree of epithelial destruction of the adrenal cortex is described.

Pre-existing fatty changes in any organ enhance the destructive action of carbon tetrachloride. Alcoholic persons appear to be more susceptible to its effects. (Case 1 was reputed to be a heavy drinker.) Old age and malnutrition likewise predispose to poisoning; but our 3 men were all aged about 30, vigorous and well nourished.

Diagnosis.—In these 3 cases it is probable that repeated inhalation of small doses of the vapour over a period of some three months produced a degree of chronic poisoning, and that a final heavy bout of dry-cleaning just before Christmas proved the last straw. In retrospect it seems not unlikely that the "influenza" which afflicted the other men in the mess at about the same time was really a mild poisoning by the same agent.

Prognosis.—The immediate mortality naturally depends on the dose and method of administration. Other factors in prognosis, such as chronic alcoholism, have already been mentioned. The likelihood of permanent renal damage in patients surviving the acute stage appears to be slight. Simon (1939) described a case of carbon tetrachloride nephrosis, with severe uræmia, who recovered clinically but died ten months later from pulmonary tuberculosis. At autopsy no sign of any permanent renal damage could be found. This is what one would expect from the pathological changes in the acute stage. The glomeruli are damaged functionally, but not anatomically, and the tubular epithelium, though severely damaged, is capable of complete regeneration. In case 1 it seems likely (since his uræmia was lessening after the first 48 hours in hospital) that if he had not died from heart-failure he would have recovered from his renal damage.

Treatment.—In the absence of the correct diagnosis in the acute stage, the 3 men were treated as ordinary cases of acute nephritis with azotæmia. Some writers have advocated the use of glucose and calcium. Miller and Whipple (1942) showed in dogs that methionine (a sulphur-containing amino-acid) was of value in preventing liver damage by chloroform. As the mode of action of carbon tetrachloride on the liver is comparable with that of chloroform, Beattie et al. (1944) used methionine in a severe case of carbon tetrachloride poisoning with success.

Prevention.—Pyrene fire-extinguishers are labelled with a prominent warning about the risk from their fumes in confined spaces. In the present instance, all blame for the mishap must rest on the men concerned, since several of them could read and speak English well; moreover, the fluid was being used in an improper manner, and not for its intended purpose. Steps are being taken to prevent any similar abuse of fire-extinguishers in the Royal Navy.

SUMMARY

Three cases, one fatal, of acute nephrosis from the inhalation of carbon tetrachloride vapour are described. The chemical was used, improperly, as a cleaning agent. The pathology, diagnosis, prognosis and treatment of such cases are discussed.

I am indebted to Surgeon Rear-Admiral F. J. D. Twigg, RN, for permission to publish this report, and my thanks are due to Surgeon Captain S. Bradbury, RN, and to Surgeon Captain A. Fairley, RN, for their help and advice in the preparation.

REFERENCES

Ashe, W. F., Sailer, S. (1942) *Ohio St. med. J.* **38**, 553.
Beattie, J., Herbert, P. H., Wechtel, C., Steele, C. W. (1944) *Brit. med. J.* i, 209.
Boveri, A. (1929) *Progr. méd., Paris*, **44**, 1198.
Dudley, S. F. (1935) *J. R.N. med. Serv.* **21**, 296.
Franco, S. (1936) *N.Y. St. med. J.* **36**, 1847.
McGuire, L. W. (1932) *J. Amer. med. Ass.* **99**, 988.
Miller, L. L., Whipple, G. H. (1942) *J. exp. Med.* **76**, 421.
Simon, M. A. (1939) *Canad. med. Ass. J.* **41**, 580.
Smetana, H. (1939) *Arch. intern. Med.* **63**, 760.

SEGMENTS AND BLOOD-VESSELS OF THE LUNGS [1]

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IT is now generally recognised that the division of the lungs into lobes is a superficial one, and that there are smaller units known as "bronchopulmonary segments" (Glass 1934) or "territories of ventilation" (Lucien 1936). Each segment is ventilated by only one air-tube, and this air-tube ventilates no other segment. The fissures of lungs show considerable variation without any underlying difference in the pattern of the segments, since the usual fissures may be wanting or incomplete, and other fissures or clefts are apt to be found at the junction of any two segments. At an early stage of development external indentations separate most of the segments and only a few become deepened as fissures.

The segment is not merely an anatomical and physiological unit: abscesses, for example, tend to be localised in segments. Moreover, since the plane of contact of adjacent segments can often be opened up with ease, it has sometimes been found feasible to remove a single segment by operation.

The varying appearances presented on bronchoscopy and in bronchograms have made evident the extent of individual variation in the pattern of the bronchial tree. Brock (1942) claims to have shown, by injections, that there are considerable individual differences in the extent of a given segment; and differences do indeed exist. Published maps of the segments show considerable differences—compare those of Foster-Carter and Lucien—apart from questions of terminology. A comprehensive survey of the variations is needed to interpret the individual as contrasted with the generalised or average lung.

In what follows the published data have been supplemented by the results of study of 100 lungs, 50 of each side, by detailed dissection of bronchi, arteries and veins, and by studying the development of the lung in embryos of 9 mm. and upwards in length. Bronchoscopic appearances have been inferred by direct inspection of orifices through the cut ends of bronchi. Detailed results will be published elsewhere. The names used have been selected on the basis of convenience and distinctive character.

BRONCHIAL TREE AND BRONCHOPULMONARY SEGMENTS

Right upper lobe.—The upper lobe bronchus usually divides into three bronchi ventilating corresponding segments—pectoral, apical and posterior (fig. 1). Though, however, three openings into the upper lobe bronchus are commonly seen, they are not necessarily these same three; there may even be four openings (figs. 1 and 2), separated by main and secondary keels. The differences arise primarily in two ways: the first axillary branch of either the pectoral or of the posterior bronchus may open directly into the upper lobe bronchus (fig. 1B and C; fig. 2C and D); or two of the three bronchi (pectoral, apical and posterior) may share a common opening into the upper lobe bronchus (fig. 3B), or, if a secondary keel is overlooked, they may appear to share a common opening (fig. 1B and C; fig. 2A, B, C, D).

Since either the pectoral axillary or the posterior axillary bronchus may open directly into the upper lobe bronchus, the segments ventilated through them will then have a status independent of the three main segments. These axillary segments can be infected by "aspiration" and form the site of local abscesses. This apparently can occur even when their bronchi are merely side branches of the pectoral or posterior bronchi respectively. These two axillary segments are, then, worthy of representation in maps of the upper lobe. Neil, Gilmour and Gwynne (1937) have recognised one of them (the pectoral axillary); Glass described the two segments together as though they were a single segment, a condition which has not yet been described—i.e., they have never yet been found sharing a common stem that ventilates no other part of the upper lobe. Some of the variations in appearance of the orifices into the upper lobe are illustrated in figs. 1, 2 and 3. It will be seen that similar appearances can be associated with different patterns of the bronchial tree. Further, the arrangement of the orifices cannot be accurately anticipated by the study of bronchograms; it may differ, even though the general pattern of the bronchi appears similar. But the previous examination of a bronchogram should be of assistance if employed for the subsequent interpretation of the arrangement seen with the bronchoscope, for the chief difficulties of interpretation turn on the question whether axillary bronchi open *directly* into the upper lobe bronchus. An answer is provided if we can distinguish from the bronchogram whether one of the axillary bronchi is directed towards the upper lobe bronchus or whether the axillary bronchi are both secondary branches from the posterior and spectral bronchi.

Right middle lobe.—This lobe occasionally shows a vertical fissure which separates the generally recognised axillary (lateral) and medial segments. There may be, on the other hand, a horizontal cleft, which divides the medial part into upper and lower segments. This cleft is liable to be mistaken for the true horizontal fissure, if the latter is at the same time absent (fig. 4). Two consequences of this arrangement deserve note. First, the "upper lobe" will appear to receive a bronchus from the middle lobe bronchus. Secondly, if an attempt is made to open the apparent "horizontal" fissure with a view to performing lobectomy the separation will be found obstructed by a branching of a middle lobe bronchus far in front of the hilum.

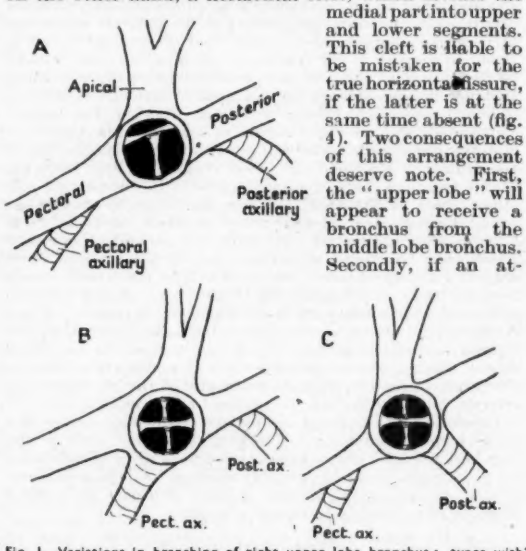

Fig. 1—Variations in branching of right upper lobe bronchus: types with horizontal keel. Types (B) and (C) are liable to confusion; both may be confused with type (A) if the upper keel is overlooked.

Left upper lobe.—The internal pattern of this lobe is comparable with that of the combined upper and middle lobes of the right side (cf. Ewart 1889); it differs only in details. The pattern of the orifices opening into the left upper lobe bronchus is however very different from

1. Abstract of two Hunterian lectures delivered to the Royal College of Surgeons, April, 1944.

that of the right side since this bronchus serves as a common stem for all bronchi of the lobe. Commonly it divides into *ascending* and *lingular* bronchi (fig. 5C) which are distributed in general like the bronchi of upper and middle lobes of the right lung; thus the ascending bronchus divides into pectoral, apical and posterior (the two latter sharing a common stem much more often than on the right side), while the lingular provides three branches—upper, lower and axillary bronchi. Two orifices are thus commonly recognisable opening into the upper lobe bronchus, separated by a horizontal keel. This same bronchoscopic appearance, however, is often associated with a different arrangement of the bronchus; for, as Foster-Carter pointed out, the pectoral bronchus may open below the keel and not above. Previous examination of a bronchogram should permit recognition of this variation.

In some lungs bronchoscopy of the upper lobe shows, instead of a single keel separating two orifices, a slit-like aperture between two keels (fig. 5D). Three orifices are thus visible, the middle one in all known examples opening into the pectoral bronchus. A variant of this is a "trefoil" arrangement of orifices (fig. 5E).

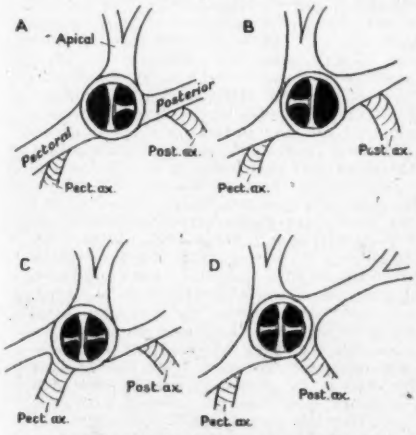

Fig. 2—Right upper lobe bronchus: types with vertical keel. If only the vertical keel is seen, all these are liable to confusion. If secondary horizontal keels are seen, types C and D still appear identical on bronchoscopy.

Right and left lower lobes.—The maps provided by recent British and American authorities do not at first sight conform to the classical accounts of the bronchial tree, in which a stem bronchus is described as having a series of ventral and dorsal branches, plus a medially placed cardiac bronchus (Aeby 1880). Now comparative anatomy shows that the human lung has undergone a reduction of the basal portions (i.e., of the lower dorsal and ventral segments), while the upper lobe has become exaggerated in size. Further, a re-examination of the development of the bronchi shows that Aeby's account is substantially correct. The anterior and middle basic bronchi of the lower lobe are found to be well-developed bronchi of the ventral series; the dorsal segment (Nelson 1932) is the first dorsal one, while the posterior basic segment comprises the remaining ventral and dorsal segments.

There is a *cardiac segment* in the left lung as well as in the right, though it is not shown in most of the maps of segments (apart from that of Lucien 1936); it is commonly larger on the left than on the right side, though it often shares a common stem with the anterior basic bronchus. Both cardiac segments may extend further forwards than is generally shown—viz., to the interlobar or even on to the costal surface. A cleft marking off this segment is sometimes seen on the mediastinal surface, and exceptionally it has been found on the costal surface.

BLOOD-VESSELS

Attention will be directed primarily to the distribution of pulmonary vessels with reference to broncho-pulmonary segments. Arteries and veins present very different relationships. The arteries accompany minor bronchi very closely, the two together forming an arterio-bronchial axis to the segment. Two or more arteries may enter a single segment, but when they do they are distributed with different bronchi within the segment. The larger veins, unlike the arteries, are situated in the

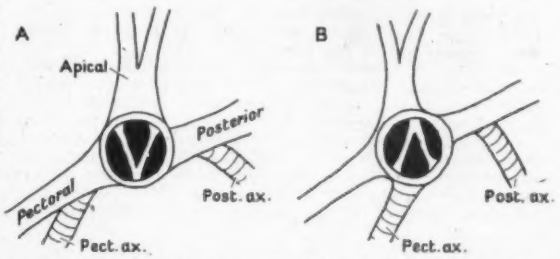

Fig. 3—Right upper lobe bronchus: types with trefoil keels. (A) The three openings are commonly the same as those of fig. 1 (A). (B) A type with three openings which are not the same as in A.

connective-tissue planes between the segments and collect blood from adjacent segments.

Right pulmonary artery.—The upper division of the right pulmonary artery commonly provides arteries for the pectoral, apical and posterior segments, but it is not the sole supply of the upper lobe; one, two or three *ascending* arteries also enter the lower part of this lobe from the lower division (cf. Narath 1901). These ascending arteries join company with some of the bronchi in the pectoral and posterior segments. Their size varies inversely with the corresponding segmental arteries of the upper division; an ascending artery may indeed provide for all the bronchi of one of these segments. As a rule, about half of the posterior segment is supplied from an ascending artery, and a smaller part of the pectoral segment from another ascending artery. The presence of a large posterior ascending artery can be readily recognised if we open up the oblique fissure; if the artery is thus ascertained to be small we may infer that the upper division of the pulmonary artery will be the main supply of the posterior segment.

The artery to the dorsal segment of the lower lobe usually arises very close to the posterior ascending artery, and sometimes shares a common stem with it. An ascending artery for the upper lobe has been encountered arising in common with the middle lobe artery.

Different appearances in the way in which branching of the upper division occurs are due to the following variations: (1) early division of the pectoral artery into two; (2) early division of the apical artery into two; (3) presence or absence of a "recurrent" branch to the posterior segment. A recurrent branch, when large, passes backwards directly above the upper lobe bronchus just within the lung—i.e., next to the reflection of visceral pleura on to the root. Exceptionally a pectoral branch is lacking, and a large ascending branch from the inferior division then replaces it. The lower division of the right pulmonary artery is the sole supply of the middle lobe (generally by two branches) and of the lower lobe, in addition to contributing to the supply of the upper lobe, as stated above.

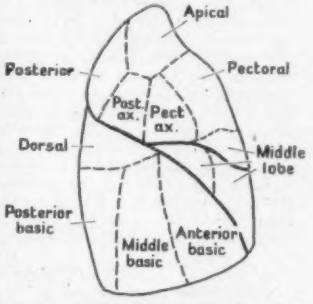

Fig. 4—Supernumerary fissure in right middle lobe: an exceptional and misleading appearance, simulating the horizontal fissure. Segments are shown mapped out.

Left pulmonary artery.—This artery, in arching over the left upper lobe bronchus, provides arteries for the apical and posterior bronchi. Now, the artery for the pectoral bronchus occasionally arises anteriorly before the arch; more often it arises afterwards, and it is then below the origin of the artery of the dorsal segment of the lower lobe. In this situation care is needed if we wish to preserve the pulmonary arterial supply intact to the one lobe when the other is removed. The lingular artery usually arises after the main artery has arched over the bronchus; it then passes forwards below the bronchus. The way in which the artery for the

pectoral segment arises can be readily ascertained by inspection of the main artery and its branches in the depth of the interlobar fissure.

Veins.—The larger collecting veins lie on the periphery of the various segments. They are therefore found between segments, on interlobar surfaces, or on the mediastinal aspect of the lungs. On the costal and diaphragmatic surfaces large veins are generally absent; the blood is collected into the veins that lie between segments or on interlobar surfaces. Since the veins that run in the connective tissue planes between segments drain the adjacent segments, it follows that these vessels form an anastomosing system throughout the lobes, and where fissures are incomplete, from one lobe to another. In conditions in which the pulmonary arterial supply fails, the venous anastomoses may contribute to the vitality of these (respiratory) portions of the lungs, which are not ordinarily served by bronchial arteries.

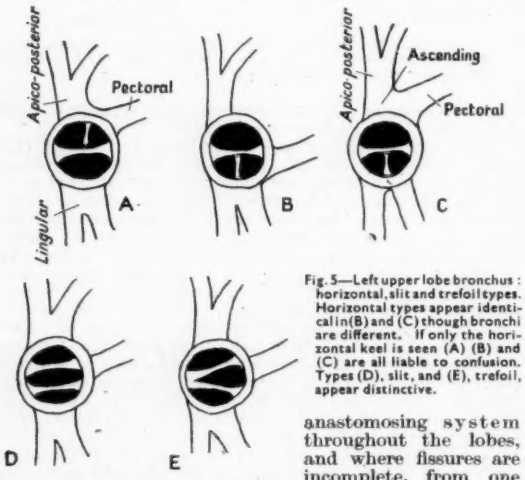

Fig. 5—Left upper lobe bronchus: horizontal, slit and trefoil types. Horizontal types appear identical in (B) and (C) though bronchi are different. If only the horizontal keel is seen (A) (B) and (C) are all liable to confusion. Types (D), slit, and (E), trefoil, appear distinctive.

Two further aspects of this venous arrangement deserve comment. If an intersegmental plane is opened with a view to a partial lobectomy, the tributaries of a collecting vein in the plane must of necessity be divided on one side or the other. Again, when a fissure is incompletely developed, the adherent region is like an intersegmental plane, inasmuch as veins from both lobes are connected along the zone of union. Not infrequently indeed a large vein is found passing from one lobe to another if an incomplete fissure is extended artificially. The commonest situation for such a communicating vein is in the posteromedial part of the right oblique fissure; a large vein may carry blood from the dorsal segment of the lower lobe to the *inferior* pulmonary vein. It is the latter variation which has been mistakenly described as a "superior pulmonary vein" running down behind the root of the lung.

Rare variations of the arteries and veins of the lungs have been recorded, but none has been found in the present series (Batts 1939, Cleland 1941, East and Barnard 1938, Ingalls 1932, Hyrtl 1839).

SUMMARY

Individual variations in the relation of segments, bronchi and bronchial orifices require consideration for the interpretation of findings in a particular lung.

Arteries and veins show definite relations to the segments, but there is considerable variation in their mode of connexion to the large vessels in the roots of the lungs.

The variations have been investigated by the dissection of 100 lungs and by a study of embryonic development.

REFERENCES

Aeby, C. (1880) Der Bronchialbaum der Säugethiere und des Menschen, Leipzig.
Batts, M. (1939) *J. thorac. Surg.* **8**, 565.
Brock, R. C. (1940–41) *Guy's Hosp. Rep.* **90**, 216; (1942) *Ibid*, **91**, 111; (1943) *Ibid*, **92**, 26 and 82.
Cleland, W. P. (1941) *Brit. J. Tuberc.* **35**, 141.

References continued at foot of next column

Rh ANTENATAL TESTING

A SUGGESTED NOMENCLATURE

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THE importance of the Rh factor in determining the onset of fœtal hæmolytic disease has been well established by the work of Levine and others (1941 and 1941), Boorman and others (1942) and Race and others (1943), who showed that over 90% of mothers of erythroblastic babies were negative when tested with human anti-Rh sera similar in action to the sera of rabbits immunised with Rhesus monkey erythrocytes, described by Landsteiner and Wiener (1940).

The present investigation was undertaken to find out whether a routine determination of the Rh group would be of value in antenatal clinics, and it was hoped that the work might shed further light on some of the more difficult problems in connexion with Rh estimation. With the assistance of several well-tried human immune sera it was proposed to detect Rh-negative mothers, to ensure that should they need transfusion they would receive Rh-negative blood. It was also decided to test for the presence of any irregular antibodies in their serum. The cases were unselected, every antenatal mother being bled at her first attendance at the clinic, which in the great majority was in the third or fourth month of pregnancy. At the outset only three drops of blood were obtained from each patient at their first attendance at the clinic and suspended in 1 ml. of sterile normal saline. On being received at the laboratory the cells were washed and resuspended in saline to give a 1% suspension, and were then tested with a single serum with the unwanted a or β antibodies inhibited by group-specific substance if necessary. The few which failed to react were tested with a second serum and those which still failed to react were tested with a third. This method was used to conserve the valuable sera. The bloods which gave negative readings with three sera were reported as Rh-negative. A sample of whole clotted blood was obtained the next time the patient attended for the cells to be re-tested with further Rh antisera. The patients' sera were then tested with cells from members of the laboratory staff, including six known positive and two negative controls, to disclose the presence of antibodies. In only one case did the repeat using the sera anti-Rh, anti-Rh_1, anti-Rh_2 and anti-Rh′ make the result "positive" instead of "negative," and this was the rare type Rh″.

When about 90 tests had been carried out, a classification of subgroups of Wiener (1943) then unpublished was kindly shown to me by Race and Taylor, and the system of testing was altered to make the most use of the sera; from this point all cells were tested with four different types of sera, in every case with at least two sera of each type.

For the second hundred tests a larger sample of blood was taken and the investigation was extended to include the examination of Rh-positive mothers' serum for antibodies, because it was now clear that the Rh-positive mothers, although much less likely to do so, might also develop Rh antibodies, or the factors AB, MN or P might provide the antigenic stimulus in them. It was also decided that all the bloods should be re-examined just before parturition, in case antibodies had then appeared.

TECHNIQUE FINALLY ADOPTED

Collection of blood and preparation of serum and cells.—From all patients except the first hundred 2–5 c.cm. of whole

REFERENCES (*continued*)

East, I., Barnard, W. G. (1938) *Lancet*, i, 834.
Ewart, W. (1889) The Bronchi and Pulmonary Blood-vessels, London.
Foster-Carter, A. F. (1942) *Brit. J. Tuberc.* **36**, 19.
Glass, A. (1934) *Amer. J. Roentgenol.* **31**, 328.
Hyrtl, J. (1839) *Med. Jahrb. Oesterr.* **18**, 3.
Ingalls, N. W. (1932) *Anat. Rec.* **53**, 269.
Lucien, M., Weber, P. (1936) *Arch. Anat., Strasbourg*, **21**, 109.
Narath, A. (1901) *Bibl. med., Abt. Anat. Hft. 2. Stuttgart*, Der Bronchialbaum der Säugethiere und des Menschen.
Neil, J. H., Gilmour, W., Gwynne, F. J. (1937) *Med. J. Aust.* ii, 165.
Nelson, H. P. (1932) *J. Anat.* **66**, 228; (1934) *Brit. med. J.* ii, 251.

blood was obtained in 3 × ½ inch centrifuge tubes by venipuncture. At the laboratory the tubes containing the blood were centrifuged and the serum pipetted off and heated in the 56° C. waterbath for 20 minutes to inactivate the complement. The red-cell suspensions were prepared by shaking the clot with saline and the suspended red cells were taken off and

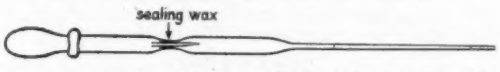

Fig. 1—Throttled pipette (Wright and Colebrook) for measuring small quantities of serum. Length about 8 in.

washed twice more with saline. If tests were not made immediately, the serum was stored frozen solid until the time of testing.

The patients' sera were each tested against a minimum of five different lots of red cells designed to cover the known Rh genes and also groups A and B. While it was thought that these numbers were inadequate and that each serum should be tested against about three times this number of different cells (since there is great variation in the strength of reaction of cells of identical genetic make-up), the amount of work involved was found to be prohibitive. However, all doubtful tests were recorded and repeated with sixteen lots of cells. Before being Rh-tested the patients' cells were ABO-grouped in order that appropriate sera could be selected.

Agglutination technique.—In the method now used the tests were made in small rimless test-tubes (Durham's) measuring

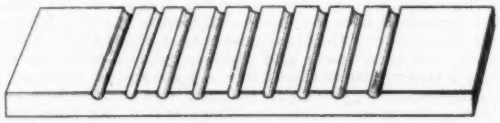

Fig. 3—Multiple grooved slide (5 in. by 1 in.) permitting examination of several sediments side by side.

2 in. × 0·2 in., since the large tubes and original quantities described by Landsteiner and Wiener (1941) were wasteful of sera. Each test was made by carefully mixing 0·0125 ml. of serum with an equal quantity of 1% red-cell suspension in the bottom of one of the small tubes and then shaking the mixture. To make the measurement of these small quantities easier throttled pipettes (fig. 1) were used as described by Wright and Colebrook. The tubes were stood in glass-bottomed wooden racks (fig. 2) made from the solid wooden blocks holding fifty tubes in use by the blood-transfusion services.

The tubes were incubated for 2 hours in the air incubator and the reactions were then read by withdrawing very gently about half the sediment and about half the fluid from each tube with a fine Pasteur pipette and blowing out carefully on to one partition of the multiple grooved slide (fig. 3) so as to disturb the agglutinates as little as possible. When charged the slide was rocked once gently to fill each chamber and the sediment was examined under the low power 2/3 in. of the microscope with the stage very slightly tilted, so that the mixture moved gently by. Even the smallest agglutinates were detected by this method when none could be seen on the flat using an ordinary microscope slide. The danger of diagnosing rouleaux as true agglutination may be enhanced by this method, though strong rouleaux-formers are readily recognised. (Several pronounced rouleaux-forming sera were found in the present series.) The eight-chambered slide was of great assistance in assessing any very weak reactions, since it afforded comparison of several sediments side by side. Any doubtful reading was recorded as (?) and tests were repeated before a decision was taken. Finally, in assessing the results of the various sera, each of those marked (?) was recorded as negative unless there was evidence of agglutination with another serum.

The diagnostic sera were diluted with normal saline before testing, each serum being diluted differently according to titre. For example, an anti-Rh′ serum from a group O donor of titre 1/512 was diluted and inhibited with secretor saliva as follows—1 drop serum, 1 drop A saliva, 1 drop B saliva, 2 drops saline using the same pipette, giving a dilution of 1 in 5. With titres over 1/1000 dilutions of 1 in 10 produce good reactions even with weakly reacting cells. For some difficult readings, centrifuging for a minute at low speed (about 1000 revs.) brings out a clearer result.

In this investigation, however, the centrifuge was used only when the patients' sera were being tested for antibodies, since a weak reaction was more likely to be discovered by this method.

Recently a waterbath and centrifuge technique described to me by Wiener (personal communication) has been tried in parallel without as yet giving superior results, but it takes less than half the time and there is little chance of the contents of the tubes drying up. The centrifuge must be used with discretion in determining Rh subgroups, since it may produce false positives due to a trace of some antibody other than the one being operated. Thus with anti-Rh_1 and anti-Rh_2 sera the centrifuge is better avoided unless the titre is extremely low, because with high titred serum from Rh-negative women the presence of a weak standard anti-Rh antibody in either might be demonstrated by centrifuging.

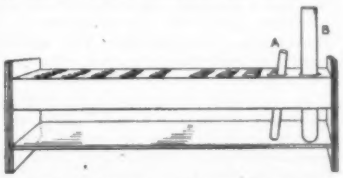

Fig. 2—Wooden rack used in agglutination tests. Length 7 in. A, tube used in present series; B, tube used by Landsteiner and Wiener (1941).

RESULTS

ABO groups.—The results of ABO-grouping of the 200 antenatal cases showed them to be a representative sample of the populace—group O, 73 cases (36·5%); group A, 89 cases (44·5%); group B, 30 cases (15%); and group AB, 8 cases (4%). No examination was made for subgroups A_1, A_2.

Rh groups.—In this investigation for ease of description the cells were named after the sera with which they react according to the numbering below. It is proposed that the phenotype of cells should be recorded in this manner (see Murray 1944). Thus cells which react with sera 1 and 3 are called Rh_{13}.

TABLE I—NUMBERING OF SERA ADOPTED IN PRESENT SERIES
Only the four sera, 1, 2, 3 and 1 + 3, were used

Serum no...	4	3	2	1	1+3	2+3
Reaction of Europeans (%)	80	84	30	70	87	87
Old term ..	St	anti-Rh	anti-Rh_2	anti-Rh_1	anti-Rh′	anti-Rh″

The statistical value of the series would have been greatly benefited by the use of serum no. 4 (St of Race and Taylor); this was impossible because of the very small quantity of serum available at that time. So far

TABLE II—PERCENTAGES OF SUBGROUPS FOUND IN THIS INVESTIGATION COMPARED WITH THOSE OF WIENER AND OTHERS AND RACE AND OTHERS

Phenotype		Sera						
Race et al. Wiener et al.	Suggested name	84 % 3	30 % 2	70 % 1	87 % 1+3	Wiener et al.	Race et al.	% in second hundred of present series
rh	(Rh_4)	−	−	−	−	12·75	16·59	11·0
Rh_1	(Rh_{12})	+	−	+	+	50·0	50·42	51·0
Rh_2	(Rh_{234})	+	+	−	+	15·5	16·02	10·0
Rh_1 Rh_2	(Rh_{1234})	+	+	+	+	17·0	14·29	16·0
Rh_0	(Rh_{24})	+	−	−	+	2·5	0·65	4·0
Rh′	(Rh_1)	−	−	+	+	2·0	0·65	7·0
Rh″	(Rh_{34})	−	+	−	−	0·25	0·92	1·0
Rh′ Rh″	(Rh_{134})	−	+	+	+	..	..	..
Rh_7	(Rh_{13})	−	+	+	+	..	0·69	..
* Rh_z	(Rh_{123})	+	+	+	+	..	..	..

* Using the sera 1, 2, 3 and 1 + 3 it is not possible to distinguish Rh_z from Rh_1 Rh_2. The presence of an Rh_z gene can only be determined in a suitable pedigree using serum 4 (St or anti-Hr) in addition to the above sera. Race and others, using serum 4, were able to differentiate homozygous Rh_1 cells from Rh_1 rh

I have been unable to produce immune rabbit sera by the inoculation of O Rh-negative cells.

The results of Rh grouping in the second hundred cases of the present series are compared in table II with those of Wiener and his colleagues (1944) and of Race and others (1943, 1944). With these four sera, 25 or 12·5% gave negative reactions and were therefore Rh_4 or negative. Of these negative reactors the sera of two contained Rh antibodies, one of which was a 70% or no. 1 serum, from a woman with a history of transfusion from her husband after a previous post-partum hæmorrhage, and the other a 84% or no. 3 serum. Neither of these antibodies showed any increase in titre towards the end of pregnancy. No detectable Rh antibodies were found in this series in the sera of Rh-positive patients.

DISCUSSION

In the present series 26·2% positive reactions were obtained with no. 2 sera (30% or anti-Rh_2), and this would suggest that the no. 2 sera in use were missing occasional cells containing Rh_2 gene. This has been borne out by an examination of 40 bloods in parallel with sera kindly sent by Wiener from New York, and it was found that a weak reaction was given by Wiener's anti-Rh_2 in two cases, where three no. 2 (anti-Rh_2) sera were negative. This weak reaction may, on the other hand, have been due to the presence of some serum 3 (ordinary anti-Rh) in Wiener's anti-Rh_2, but if they were true reactions they would account for the slightly low figure for Rh_2. One more positive reaction was obtained with Wiener's anti-Rh (84%) than with my no. 3 in the same series.

If the object of an antenatal investigation were only to detect Rh-negative mothers, then the investigation could have been maintained on the original lines with blood obtained by finger prick and with only two sera—anti-Rh′ (1+3) and anti-Rh″ (2+3)—with no test of patients' sera for antibodies. But the more complete examination for genetic make-up and the presence of antibodies will ultimately be of valuable clinical assistance, as will an examination of the husband's cells when the mother is Rh_1 (Rh-negative), to enable us to forecast possible genotypes of the unborn infants and the likelihood of incompatibility. For a statistical evaluation it is proposed to wait until a much greater number of tests are completed and the obstetrical outcome is recorded. It is then hoped to correlate the clinical and serological findings.

Since this paper was written the sera of four subsequent "Rh-positive" mothers have been found to contain Rh antibodies.

SUMMARY

Rh tests showed that 12·5% of 200 unselected consecutive antenatal mothers were Rh-negative.

The value of examination of expectant mothers' sera is seen in that 2 of the 25 Rh-negatives had anti-Rh antibodies.

The incidence of Rh subgroups in cases 101–200 is shown to fit well with the findings in New York.

A numerical classification of subgroups is proposed.

I would like to thank the obstetrical department of the Middlesex Hospital for their coöperation.

REFERENCES

Boorman, K. E., Dodd, E., Mollison, P. L. (1942) *Brit. med. J.* ii, 535 and 569.
Landsteiner, K., Wiener, A. S. (1940) *Proc. Soc. exp. Biol. NY*, **43**, 223. (1941) *J. exp. Med.* **74**, 309.
Levine, P., Katzin, E. M., Burnham, L. (1941) *J. Amer. med. Ass.* **116**, 825.
— Burnham, L., Katzin, E. M., Vogel, P. (1941) *Amer. J. Obstet. Gynec.* **42**, 925.
Murray, J. (1944) In the press.
Race, R. R. (1944) *Nature, Lond.* **153**, 772.
— Taylor, G. L., Cappell, D. F., McFarlane, M. N. (1943) *Brit. med. J.* ii, 289. (1944) *Nature, Lond.* **153**, 52.
Wiener, A. S. (1943) *Proc. Soc. exp. Biol. NY*, **54**, 316.
— Sonn, E. B., Belkin, R. B. (1944) *J. exp. Med.* **79**, 235.
Wright, A. E., Colebrook, L. (1921) Technique of the Teat and Capillary Glass Tube, London.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—At 7 PM on Thursday, Nov. 9, at 17, Bloomsbury Square, London, WC1, Mr. A. L. Bacharach, FRIC, will speak on the properties and uses of penicillin in relation to pharmacy.

TETANY AFTER EXTENSIVE GUT RESECTION

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IN the following case the patient survived for a year after an exceptionally extensive resection of gut, but developed late metabolic complications.

CASE-RECORD

A tailor, aged 67, was admitted to hospital in the early hours of March 1, 1941. He had always been in good health. At 8.30 on the previous evening he had been seized with very acute abdominal pain, worst to the right of, and just above, the umbilicus. He had since vomited repeatedly. He was pale and rather restless, making attempts to vomit and obviously in severe pain. Blood-pressure 130/90 mm. Hg, pulse regular, rate 84 per min. The abdomen was not distended or rigid, but was extremely tender generally, especially to the right of the umbilicus. The lungs and heart were normal. A diagnosis of high intestinal obstruction was made, laparotomy decided upon, and an intravenous drip saline set up.

Operation was begun at 3 AM on March 2 under general anæsthesia. A long right paramedian incision was made: a little free fluid was found in the peritoneum but it was not bloodstained. The whole of the ileum, lower jejunum and cæcum were dusky blue and showed no peristalsis. Pulsation could not be felt in the mesenteric vessels, and thrombosis of the superior mesenteric artery was diagnosed. Resection was performed between the lowest loop of healthy jejunum and the middle of the transverse colon: side to side anastomosis was then made and the abdomen closed. It was judged that not more than 3 feet of jejunum had been saved.

Progress.—The patient's condition was satisfactory considering the nature of the operation, and a drip transfusion of a pint of stored blood was given. On March 3 fluids were given by mouth and the intravenous saline was stopped. Next day MacLean's diet was started. From this time onwards the patient improved generally, although he invariably had 3 or more fluid motions daily. He was discharged home on April 11.

Throughout the next 8 months he maintained fairly good health but continued to have intractable diarrhœa, with 4–6 fluid motions per day. His weight dropped from 10 stone to 6 stone and his strength was poor. In December he began to vomit, usually once or twice a day and diarrhœa continued. By the end of February he was vomiting 6–8 times per day and began to complain of painful cramps in his arms and legs, twitching of his face, and pain in the chest.

Readmission.—When readmitted on March 3, 1942, the patient was severely wasted and dehydrated, with generalised tetanic spasm of the limbs and face. The legs were extended and feet plantar-flexed, and the arms were crossed over the body with bilateral "main d'accoucheur." BP 115/70 mm. Hg, pulse 92, respirations 12 per min. The tetany was ascribed to alkalosis caused by the long-continued vomiting and diarrhœa. Accordingly an intravenous drip saline was set up, warmth applied, and ammonium chloride gr. 30 given four-hourly by mouth. Within 7 hours the spasms had completely gone, although Chvostek's test was positive, and Trousseau's test positive in 1 minute. After this, no further evidence of tetany was seen. Blood-urea on March 4 was 62 mg. per 100 c.cm. The intravenous saline was stopped after 2 litres had been given and fluids were continued by mouth. Ammon. chlor. was continued in rather smaller doses. On March 7 the serum calcium was 7·2 mg. per 100 c.cm.; hæmoglobin 94%, red cells 4,750,000 per c.mm., colour-index 0·98, white cells 9600 per c.mm. (polymorphs 90%, lymphocytes 5·5%, monocytes 4·5%). On March 9, calcium gluconate gr. 20 t.d.s. and 'Radiostoleum' 1 capsule t.d.s. were given by mouth. On March 10 a fractional test-meal showed complete achlorhydria with no response to histamine. Later acid hydrochlor. dil. min. 30 was given t.d.s. and the patient was put on a low-residue diet. In spite of this, fluid motions continued to be passed 6–8 times per day, with no apparent response to tinct. opii and bismuth by mouth. There was no further vomiting. The patient's condition gradually deteriorated: he became weaker and more emaciated and eventually died on March 23, 1942.

Autopsy.—The anastomosis was in good working order, though bound down by adhesions in the right iliac fossa.

The remaining jejunum measured less than 3 feet. No disease of the aorta was seen, although there was some atheroma of the coronary vessels; the left coronary artery was exceptionally large and the right only vestigial.

DISCUSSION

It is astonishing that this patient managed to survive so radical a resection for 12 months, during which time his small intestine consisted solely of duodenum and 3 feet of jejunum. Absorption of fluid must have been limited, for almost half of the large intestine was also absent. Calcium is absorbed principally in the upper part of the small intestine, chiefly as calcium chloride, and absorption is favoured by an acid medium. Achlorhydria would in this case be an unfavourable factor. Whittaker and Bargen [1] reported on the postoperative progress of a series of cases of resection or exclusion of the colon with ileostomy. Many of their cases suffered from severe postoperative diarrhœa which often did not clear up until 3 months after the operation. In 8 of their cases investigated there was a postoperative fall in serum calcium, in 2 cases severe enough to produce tetany. In one case tetany only occurred on one occasion, 6 months after operation. In the other case tetany occurred repeatedly and was associated with intractable diarrhœa; autopsy revealed ulceration of the ileum.

In the case reported here the tetany was rapidly and permanently relieved on March 3 by the administration of ammonium chloride and intravenous saline; yet on March 7 the serum calcium was as low as 7·2 mg. per 100 c.cm. and calcium therapy had not then been started. This suggests that tetany was not due entirely to a low serum calcium. Possibly the patient had adjusted himself to a low serum calcium without going into tetany [2] as might happen if the serum calcium were gradually lowered in the presence of a negative calcium balance. Protracted vomiting and diarrhœa then produced alkalosis, depressing the ionisation of the already depleted soluble serum calcium, and precipitating tetany. Measures taken to combat alkalosis then rapidly relieved tetany. Unfortunately, owing to war conditions, no facilities were available for investigating the patient's calcium balance or alkali reserve.

I should like to thank Mr. B. H. Pidcock and Dr. C. B. S. Fuller, of the Royal Hants County Hospital, for permission to publish this case.

SURVIVAL AFTER REMOVAL OF TWENTY FEET OF INTESTINE

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THE following case-history may lighten the anxieties of other surgeons who have to undertake resections on the heroic scale. At the time of operation, imperfect acquaintance with the published work led me to take a gloomy view of the patient's prospects.

A married woman, aged 56, who had undergone abdominal hysterectomy 10 years before, and removal of the breast for carcinoma 6 years before, woke with acute abdominal pain at 2 AM on March 1, 1943; she did not vomit. Later in the morning a message was sent to her doctor, but he did not see her till 1 PM. He gave immediate orders for her removal to hospital, where I saw her at 4 PM. She was a small thin woman in rather poor condition. She did not complain much of pain, but the lower abdomen was distended, tense and very tender on palpation.

Operation was performed at 5 PM. Dr. F. F. Waddy gave the anæsthetic, and I was assisted by my house-surgeon, Mr. I. V. Hankins. An intravenous glucose-saline drip was started during the operation. A foul odour was apparent on opening the abdomen, and a mass of gangrenous gut presented. On bringing this outside, a fine adhesion was found connecting a loop of small intestine to the left side of the pelvis. Round this adhesion the cæcum and mobile ascending colon, together with nearly all the small intestine, had rotated to form a volvulus. The gut was gangrenous and the mesenteric vessels thrombosed. A few feet of the proximal jejunum was normal, so I resected the gangrenous mass, which included the cæcum and ascending colon. Lateral anastomosis was performed between the jejunum and transverse colon. The patient's condition was very poor during the operation, but improved on her return to the ward. Mr. Hankins and I measured the small intestine removed against the side of a three-foot sink, much as a draper measures ribbon. We found there was 19 ft. of small intestine, as well as the cæcum, ascending colon and some of the transverse colon.

Much to our surprise, the patient made a good recovery. The intravenous drip was continued for 48 hours. On March 5 the bowels acted 12 times, on the 7th only 6 times, and by the 12th they were acting only 3–4 times in the 24 hours. She was fed on a low-residue diet with plenty of carbohydrates and little fat. In the early days she was given mist. kaolini et morphinæ *NWF*; later she was given iron. She went home on March 25 in fair health and weighing 6 st. 6 lb., her bowels acting about 4 times a day. By May 7 she had gained 2 lb.; she was troubled with flatulence and her bowels usually acted only once daily. By Oct. 19 she had gained more weight and was actively engaged on parish work as a clergyman's wife. On Feb. 15, 1944, she weighed 7 st. 7 lb., "a little more than before her operation." Her bowels were acting once a day but were liable to be upset if she took fruit or vegetables. Her diet was: breakfast, egg, bread and butter and marmalade; lunch, what was going, with a moderate amount of potatoes; light tea; supper, soup, bread and cheese.

Investigations (Dr. F. A. Knott) on March 22, 1944, showed that her stool was semi-formed but slightly pale owing to a mild excess of unsplit neutral fat. There was no excess of split fat or of carbohydrate; only a few undigested muscle-fibres were present. Pus and blood-cells were absent and there was only a slight excess of intestinal mucus and epithelial debris. Cultures contained the usual fæcal organisms without any evident distortion of the flora. Blood-count: hæmoglobin 82%, red cells 4·5 million per c.mm.; colour-index 0·91, white cells 6800 per c.mm.; differential count normal. A few of the red cells were slightly pale and irregular in shape but the blood-picture showed nothing else abnormal.

On Sept. 16 she was said to be still keeping well.

1. Whittaker, L. D., Bargen, J. A. *Surg. Gynec. Obstet.* 1937, **64**, 849.
2. Wright, S. Applied Physiology, London, 1940, p. 298.

CELLULITIS DUE TO A HÆMOLYTIC STREPTOCOCCUS TYPE C

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IN a small outbreak of cellulitis we observed 27 similar cases occurring within a short time in a limited area.

The patients complained of malaise, and after 3–4 days had pain, usually in one or other pectoro-axillary region; at this stage examination revealed only slight local swelling and tenderness. Within the next 3 days the part involved became hot and tender and the overlying skin red. The process tended to spread locally; there was no raised edge but the line of demarcation of the affected area was fairly distinct. The lymph-glands in the immediate vicinity were slightly enlarged and tender. The toxæmic manifestations and high temperature (up to 104° F. and in one case 106°) were rather alarming. In the treated cases, after a week or 10 days' sulphonamides therapy, the lesion was sufficiently localised for surgical intervention. On incision, innumerable small pockets of pus, varying from pin-heads to 5 mm., were found between the skin and deep fascia, and in addition several larger pockets up to 2 in. diameter. The infected part was a honeycomb containing thick pus—about ½ pint was removed. Pus continued to drain for about a week, after which there was uneventful convalescence.

In 16 cases the lesion was in a pectoro-axillary region, in 6 in the groin, in 3 cases in the neck and in 2 below the knee. In each case only one region was affected. Of the 27 patients 22 were males, mostly aged 18 to 30 (youngest 6, oldest 60). Except for 5 soldiers, they were all Arab civilians.

Autopsies were not obtainable in the 4 fatal cases, but 21 of the others were investigated.

BLOOD

White-cell counts showed moderate leucocytosis (up to 20,000 per c.mm., 82–92% polymorphs) and a pronounced Arneth "shift to the left." In 20 cases the granulo-

cytes showed toxic and degenerative changes (even before much sulphonamide had been given). Red-cell counts and hæmoglobin estimates revealed a rapidly occurring anæmia, with a colour-index of unity. A typical count was 3·5 million cells with 65–70% Hb; one case had a count of 2 million and 40% Hb only a week after the onset. Nucleated cells were often seen, with aniso- and poikilo-cytosis, and reticulocyte counts were raised (up to 12%). The reticulocyte count and excess of nucleated forms are evidence of hæmolytic anæmia. Numerous examinations for malarial parasite were negative.

BACTERIOLOGY

The technique used for the isolation of the hæmolytic streptococcus which proved to be the causal organism was as follows:—

The skin over the lesion was painted with tinct. iodi after cleaning with surgical spirit. Sterile isotonic saline (2 c.cm.) was drawn into an all-glass 5 c.cm. sterile syringe, and after passing the needle once or twice through a flame it was pushed into the tissues to a depth of about 3 cm. About 1 c.cm. of the saline was then injected into the tissues and the plunger immediately drawn back to create the maximum negative pressure in the barrel. A few drops of the injected saline thus re-entered the syringe and mixed with the saline remaining in the barrel. The contents were then sprayed on to blood-agar plates and incubated. This procedure can be carried out in the early stages before pus is formed.

After 24 hours' incubation every one of the cultures examined consisted of a pure growth of hæmolytic streptococci. Blood-culture was carried out in 12 cases and 4 yielded the hæmolytic streptococcus. In all these cultures (including the blood-cultures) the organism belonged to type C (Lancefield). In the later stages the organism could be demonstrated in direct smears. No other organism was isolated except *B. pyocyaneus* in one case, and this was almost certainly a contaminant.

The organism.—Stableforth (1938) believes that type C hæmolytic streptococcus should be subdivided into subgroups a, b and c. According to his findings, subgroup c is found only in horses, being the causative organism of "strangles" (*Strep. equi*). Subgroup c (*Strep. pyogenes equi*) was cultured mainly from suppurative and inflammatory lesions in horses, and occurs sporadically in dogs and cows. Subgroups a and c were never found in man, but subgroup b was found in some mild infections in dog and man. We were unable to ascertain the subgroup of the organism we isolated, but certain features were noted.

On 5% rabbit-blood agar it produced marked β-hæmolysis and on microscopy appeared as medium-sized chains (4–12 members). No growth took place on 10% bile-agar except for one strain which produced feeble cultures. It fermented lactose and salicin but not sorbite, æsculin or mannite. Because of lack of reagents the full Edwards (1932) test for differentiating human from animal strains could not be carried out; but the fact that sorbite is not fermented suggests that the organism is primarily of human origin.

The pathogenicity of type C for humans is usually described as "low" (Topley and Wilson 1938). Lancefield and Hare (1935) say that there is no evidence that this organism is of importance as a cause of human disease, although Plummer (1935) studied 2 cultures from puerperal fever and 3 from cases of erysipelas. Certainly in our cases the organism was highly pathogenic, producing 4 deaths.

Animal experiments.—Mice usually died 24–72 hours after intraperitoneal inoculation with either saline recovered from the cellulitis area (as described above) or, in some cases, with whole blood from the patient early in the illness. Hæmolytic streptococci of the same type were easily demonstrated in the splenic emulsions. One mouse recovered but showed no immunity to a second such inoculation. Emulsions of spleens from infected mice were much increased in virulence after 3–4 passages; splenic emulsion in saline then caused cellulitis on injection into the groins of guineapigs. Otherwise the guineapig was resistant.

TREATMENT

In 22 cases drugs of the sulphonamide series were administered by mouth, 40–60 g. being given in the first 7–10 days. Of the 5 untreated cases (these did not come into hospital) 4 died. It therefore seems obvious that sulphonamides should be exhibited without delay once the diagnosis is established. Surgery was carried out in all cases with localisation, and it is noteworthy that localisation, when it did occur, appeared first in the area which had been "needled" when searching for the causal organism. Repeated transfusions of whole blood were given in 4 cases with Hb below 50%.

EPIDEMIOLOGY

More than half the patients came from area 1, containing, within 5 miles of each other, villages A (2000 inhabitants), B and C (each of 200 inhabitants). Area 2 includes villages near a fairly large town (D); it is about 60 miles from area 1. The cases were distributed as follows:—

Area 1—Village A	..	13	
„ B	..	2	
„ C	..	1	
Area 2—Town D	..	7	
Village E	..	2	
„ F	..	1	
„ G	..	1	

Two of the men were brothers living in the same house, and another 2 were clerks working at the same desk.

As type C hæmolytic streptococcus is usually an animal strain, we decided to investigate animals in the area. With the help of the local veterinary officer, we examined 12 cows and their milk, but with negative findings.

Most of the males in area 1 were employed in road-making, and it is possible that the streptococcus is either inhaled with contaminated dust or rubbed into a very small abrasion in the epidermis; the outbreak ceased when the rainy season commenced. The exact mode of entry of the organism is obscure. If it had entered an abrasion on an extremity (the usual cellulitis history) one might have expected the classical picture of a lymphangitis streaking up an arm or leg. The question of infection via the digestive tract has been considered above. The evidence for the causation of pathological lesions by inhalation of fine sprays of streptococci is inconclusive.

While these investigations were in progress, sporadic cases of classical cellulitis following infection via an abrasion were seen in two hospitals These showed classical lymphangitis spreading from the point of entry of the organism to the site of the lesion with early involvement of lymph-glands. In 9 such cases hæmolytic streptococci were isolated and these all proved to be type A (Lancefield).

In answer to our inquiries about previous outbreaks in the country, Dr. I. Itayim of the Department of Public Health informed us that streptococcal cellulitis (usually localised in the pectoro-axillary region) had been observed in the summer of 1940 in his district, mainly among labourers engaged in roadmaking; the type of organism was not determined. It seems likely therefore that such small outbreaks occur from time to time and it would be of interest to ascertain whether they are all caused by a type C hæmolytic streptococcus. If so, the peculiar uniformity in the clinical manifestations (cellulitis without classical lymphangitis) would have to be attributed to this particular organism.

SUMMARY

Within a short period 27 cases of cellulitis were seen, chiefly in Arab villagers. The condition appeared to be a primary cellulitis without lymphangitis.

The 21 cases investigated yielded a hæmolytic streptococcus type C (Lancefield) which has not hitherto been considered pathogenic to man. Its mode of entry is obscure.

Of the 5 patients who did not come into hospital and did not receive sulphonamides, 4 died. The other 22 were treated with sulphonamides and surgical drainage where necessary, and they all recovered.

We are indebted to Lieut.-Colonel P. Carney, Major J. Dudley-Rose and the medical officers of the Government Hospital, Haifa, for their full coöperation in the completion of this investigation.

BIBLIOGRAPHY

Edwards, P. R. (1932) *J. Bact.* **23**, 259; (1933) *Ibid*, **25**, 527.
Lancefield, R. C. (1933) *J. exp. Med.* **57**, 571.
— and Hare, R. (1935) *Ibid*, **61**, 335.
Plummer, H. (1935) *J. Bact.* **30**, 5.
Stableforth, A. W. (1938) *Vet. Rec.* **38**, 1203.
Topley, W. W. C., Wilson, G. S. (1938) Principles of Bacteriology and Immunity, London, p. 461.

RAPID TEST FOR THE SERODIAGNOSIS OF SYPHILIS

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IN trying to determine the part played by mastic in this test [1] we gradually diminished the amount used. We found that neither the scope nor the efficiency of the reaction is altered when this reagent is omitted, provided enough serum protein is added. Evidently the mastic acts only as a protecting colloid. Furthermore we found that any Kahn antigen can be used for this reaction, even one which is not suitable any more for carrying out the original Kahn method. It is only necessary to titrate the antigen before use.

Reagents.—(1) Kahn antigen is saturated with Scharlach R [2] and shaken vigorously for 10 min. Then it is filtered and to 8 parts of this coloured antigen 2 parts of non-coloured antigen are added. (2) NaCl, 9·0 grammes; $Na_2HPO_4 \cdot 2H_2O$, 0·35 g.; distilled water to 100 c.cm. (3) Physiological saline solution (0·9%).

Titration of antigen.—To a series of test-tubes each containing 0·25 c.cm. of Kahn antigen 0·9, 1·0, 1·1 and 1·2 c.cm. of salt solution (reagent 2) are severally added. The mixtures of antigen thus obtained are then tested with known positive and negative sera. The amount of salt solution which gives the clearest results is recorded, and the same ratio of Kahn antigen to salt solution is used for the preparation of the final antigen.

Preparation of the antigen for use.—0·5 c.cm. of Kahn antigen (1) is placed in a test-tube and the necessary amount of reagent (2), generally 2·0 c.cm., is added drop by drop while the test-tube is shaken. The antigen is then ready for use. If required, smaller or larger quantities of Kahn antigen and salt solution can be mixed provided the above ratio is maintained. The antigen thus prepared is stable only for 2–3 days and must be kept at high room temperature, the optimum being 20–25° C.

The technique of O-rapid test (without mastic) is:

For serum.—Place 2 drops of serum in a small test-tube (either active or inactive serum can be used) and add 1 drop of the antigen. Shake gently for half a minute and add 2 drops of physiological saline solution (3). Shake gently for several seconds and centrifuge at high speed for about 2 min. Read after tossing the tube gently. In a positive case a heavy red precipitate appears; in negative cases the solution remains unchanged. A very strong positive reaction shows the flocculation even before centrifugation.

For cerebro-spinal fluid.—Place 4 drops of CSF in one small test-tube and 6 drops in another; add 1 drop of non-syphilitic serum and 1 drop of antigen to each tube, shake for 1 min. and centrifuge at high speed. The reaction is positive if, after gently shaking, big red particles are seen floating in the liquid medium; in negative cases the fluid remains unchanged.

In both tests, the M-rapid test (with mastic) and the O-rapid test (without mastic), inactivation of the serum is achieved by the addition of the hypertonic salt solution (reagent 2). The final salt concentration to which the serum proteins are exposed is as follows:—

M-rapid test.[1]—0·5 c.cm. antigen, plus 2·5 c.cm. 9% NaCl, plus 1·6 c.cm. water, equals 4·6 c.cm. About 0·1 c.cm. is lost by retraction due to alcohol; the 2·5 c.cm. 9% saline solution contains 0·225 g. NaCl; therefore 4·5 c.cm. of the antigen-saline mixture contains 0·225 g. NaCl—i.e., 5%. On addition of an equal amount of serum, the final concentration of NaCl is 2·5%.

O-rapid test.—0·5 c.cm. antigen, plus 2·0 c.cm. 9% NaCl equals 2·5 c.cm. About 0·1 c.cm. is lost by retraction due to alcohol; 2·4 c.cm. of the antigen-saline mixture contains 2·0 c.cm. of 9% saline solution (0·18 g. NaCl); and therefore a concentration of 7·5% NaCl.

The two rapid tests are equally sensitive—and the choice between them depends on circumstances.

The M-rapid test requires reagents of an adequate quality, whereas the O-rapid test can be carried out with any Kahn antigen. The M-rapid antigen, kept on ice, is stable for a long time, whereas the O-rapid antigen keeps only 2–3 days. The flocculi of the M-rapid test are easier to observe than those of the O-rapid test.

1. Rappaport and Eichhorn, *Lancet*, 1943, i, 426.
2. The test may also be performed without addition of a dye.

When the CSF is to be tested in a case where the serum gives negative reactions it is advisable to perform both the M(mastic)-rapid test and the O-rapid test. So far we have tested 98 CSFs of which 14 were positive and the rest negative with both tests. With none have we found any discrepancy between the two methods.

Medical Societies

NUTRITION SOCIETY

AT a meeting of the Scottish Group, held at Dundee on Oct. 7 under the chairmanship of Dr. W. T. MUNRO, a discussion on

Diet and Tuberculosis

was opened by Miss I. LEITCH, D.SC., of the Rowett Institute. She reviewed the literature of the subject and recalled the experiences recorded after the last war. The present position was surveyed by Dr. J. S. WESTWATER of the Department of Health.

Dr. R. Y. KEERS (Tor-na-Dee) said that although malnutrition was a factor in lowering resistance there was no unequivocal evidence that it was the sole or even the most important precipitating cause. War-time diet, as far as the tuberculous subject is concerned, is not deficient in nutritive properties. The patients at Tor-na-Dee are drawn from a section of the community in which malnutrition is not encountered, yet this section has not been spared in the rising incidence of tuberculosis. Among these patients the common factors were increased hours of work and a curtailment of the time usually devoted to rest, and in no instance has dietetic deficiency played an obvious part. Dr. Keers thought that the war-time diet is perfectly satisfactory for the patient under treatment. Recently he carried out an investigation to find out whether a larger consumption of fat would be beneficial. Patients who received extra fat showed a more rapid gain in weight than did the controls during the first four months, but at the end of nine months there was little difference between the groups. This experience showed that there is nothing to be gained and even something to be lost by attempting to force the intake of fat beyond that which the patient can ingest and assimilate completely. The dietetic treatment of tuberculosis demands no more than a full well-balanced intake. Cod-liver oil is not essential and should be reserved for those whose digestion is sound.

Dr. STUART LAIDLAW (Glasgow) pointed out that although there had been a considerable increase in notification of tuberculosis the death-rate from this disease was little changed. He also noted that the number of deaths from acute bronchopneumonic tuberculosis had decreased during the war. He thought that, while the calorie intake available to the tuberculosis patient was satisfactory, an additional allowance of protein would certainly be helpful in aiding recovery.

Reviews of Books

Human Constitution in Clinical Medicine

GEORGE DRAPER, MD, associate professor of clinical medicine, College of Physicians and Surgeons, Columbia University; C. W. DUPERTUIS, PH D, physical anthropologist, constitution clinic, Presbyterian Hospital, New York; J. L. CAUGHEY, jr., MD, associate in medicine at the college. (Hamilton. Pp. 273. 21*s*.)

WHEN treating his patients the general practitioner takes into consideration—often unconsciously—not only the hammer's blow but the genetic, congenital, constitutional, social and psychological factors which make up the anvil's ring. He knows his man and without realising it is the modern exponent of holism in a specialist world. This remarkable book may be regarded as the hitherto silent total of a GP's experience analysed, examined, and subjected to statistical treatment. Beginning with the obvious fact that no two people suffering from the same disease ever display exactly identical clinical pictures, the authors consider in turn the various known causes for the variation—genetics, the vagaries of growth, the mosaic of androgyny, anthropometry and somatotypes, the physiological variations of autonomic response and the influence of

psychic trauma. The result is a book which should be read by the student (and will be with the greater appetite because it is quite useless for examinations); by the GP who will find much of his subconscious knowledge illuminated and sanctified by science; by the bright young MRCP who knows his Price, but little else, by heart; and by every specialist who engrossed with one viscus is in danger of forgetting the proximity of others.

Artificial Pneumothorax in Pulmonary Tuberculosis

T. N. RAFFERTY, MD, formerly resident physician Detroit Municipal Tuberculosis Sanatorium, Mich. (Heinemann. Pp. 192. 21s.)

THIS is no book for a novice wishing to embark on collapse therapy without other guidance. It does not cover the actual technique which, as the author says, is well covered elsewhere. "It is unfortunate," he adds, "that the belief has been allowed to grow in some quarters that the mere ability to introduce air safely qualifies one to administer pneumothorax. . . Nothing could be further from the truth." Statistics of results may be misleading if they cover cases well handled and those other cases in which indications and management have been not so good. Dr. Rafferty, analysing published work, comes to the conclusion that there are not now, and may not be for some time, any statistically sound data indicating the real effect on prognosis of properly administered collapse therapy. The rest of the book is therefore devoted to a discussion of the basic principles governing choice and management of cases. This is presented clearly, without that authoritative dogmatism which so often confuses medical writing. His review of recent work is critical, and his conclusions bear the stamp of personal experience. Particularly valuable are chapters on the minimal lesion, primary thoracoplasty, and the tension cavity. Workers in this country may question the importance attached to tracheobronchial tuberculosis, but his summary of American work on the subject is useful. His clear-headed chapter on effective and ineffective pneumothorax is followed by one equally good on closed intrapleural pneumonolysis. A chapter on the physiological mechanism of artificial pneumothorax would have added to the value of this discussion.

New Inventions

SIMPLIFIED SHOULDER ABDUCTION SPLINT

BEFORE the beginning of this war I had devised and used a light abduction splint for convalescent cases which no longer require the support of an abduction splint of the common type, or of a thoracobrachial plaster, and for those injuries around the shoulder which only involved soft tissues, or such bony ones as did not require traction. My reasons for introducing this light splint were those of economy and the disadvantages of any heavy closed support in a very hot and constantly humid climate. When war conditions called for immediate and drastic economy I began to use this splint for all cases requiring abduction. Minor modifications and additions were at once devised to allow traction when indicated.

The splint is light, and is easily applied with the patient standing, sitting or lying, conscious or unconscious. Little movement of the patient is necessary, and little help from assistants. The Cramer wire employed can be used again and again, and if it is wanted for some other purpose it is available after simple straightening; only one piece of broad Cramer wire is used for each splint.

The material I use for the adjustable bands is 'Newar,' a coarsely woven band made of soft strong 2½ in. wide by ¼ in. thick. This material is used in place of springs in beds in this country. Each band has a buckle at one end and a corresponding series of holes, reinforced by lining with any available strong cloth, on the other. Figs. 1–4 show the application of the splint. Fig. 5 shows the bands. Recently it has been impossible to obtain metal buckles, and I now use tapes tied through holes on each end of each band.

Extension can be had by adding to the wire supporting the arm at the elbow bend another piece of Cramer wire bent up to a right angle and projecting about 3 in. or more, according to the type of traction to be employed. To this added part the attachments for traction can be made.

Where a case is likely to need abduction the bands are adjusted on the patient before he is brought to the operating theatre. At the end of the operation it is

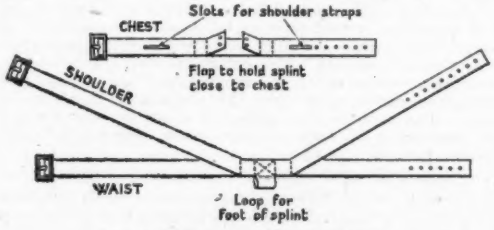


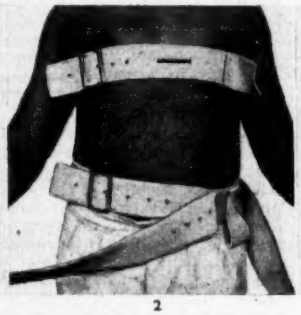
Fig. 5—Pattern on which bands are made.

then simple to place the Cramer wire in position without the least disturbance to the patient, or fear of displacing the bony alignment. Nursing the patient in this splint is very easy. He can lie down comfortably without displacing the arm and the splint. I have also found it useful for abduction in cases where there is a gunshot wound of the chest, upper extremity, or shoulder and scapular regions; with multiple wounds of both upper extremities, two such light splints can be applied to the same patient with perfect comfort. In cases with chest wounds as well as wounds of the upper extremity, inspection and aspiration of a hæmothorax are not materially interfered with by the presence of the splint.

A. T. ANDREASEN, FRCSE, FRSE
Lieut.-Colonel, IMS.
India.

1

Fig. 1—Chest-band, showing flaps to enclose upright of Cramer splint. These flaps lace together over the upright.



2

Fig. 2—Waist-band applied. The model holds out front and back cross-shoulder bands to show their attachment to the waist-band. The supporting loop of material for the foot of the Cramer upright is shown at the attachment of waist- and shoulder-bands.

3

Fig. 3—Cramer wire in place, unpadded to show bends. At the axilla the anterior band is an angle, the posterior one a smooth curve; thus the support of the upper arm is brought forward to give anterior shoulder flexion. External rotation can be obtained by arranging the angle of the forearm part suitably.

4

Fig. 4—Reinforcement by a piece of wood, its length being determined by the degree of abduction necessary.

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J. Immunol. 1943, 47: 493

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Brit. Dental J. 1942, 73, 47.

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THE LANCET

LONDON: SATURDAY, NOVEMBER 4, 1944

Opportunity for Films

THE use of the film in medicine is of respectable age. Dr. A. PIJPER, describing its application to biology, recalls that "Dr. Braun of Vienna filmed the mammalian heart in 1897, and in the same year Schuster of Berlin filmed the abnormal gait of patients. The next year, 1898, saw the filming of the first surgical operation, by Doyan, the famous French surgeon." Yet in a review of a new film in 1941 we had to admit that academic circles in England "have hardly noticed this new weapon."

What advantages has the film to offer as a teaching medium? First, it appeals chiefly to the eye, and, as Lord HORDER has remarked, we "are most of us visualists rather than auditives." Secondly, it is free from limitations of time and space. It can show, within a period of minutes, the disease environment, the onset, the signs and symptoms on entry to hospital, the treatment adopted, and the function of the patient when recovered. It can show all these at any time, for any disease, to fit a planned teaching programme; there is no need to call the patient back and ask him to describe "in his own words" how he felt on such and such a day. And he can be presented on different occasions with the emphasis on different aspects of his case—for example the clinical, the medicolegal or the epidemiological. Such repeated showings in different contexts not only help to fix the material in the mind (just as a textbook must be read repeatedly to obtain all the information in it); they also show that we are dealing with people, and not with a disease which happens to be fixed to a person. The film which can enlarge microscopic objects can also compress hours into seconds, so that developmental processes can be displayed clearly and with emphasis; or it can magnify seconds into minutes. With the aid of the film, demonstrations by the best teachers can be available all over the country. Complex experiments will always work on the screen; so students are not kept waiting by some vagary of the biological material. And, best of all, everyone can see clearly and simultaneously.

As MACKEITH and LONGLAND suggest on another page, the potentialities of the medical film are not being realised, because there is no single body to coördinate existing activities. A clearing-house is needed to collect information about existing films, to improve facilities for borrowing them, to draw up a list of subjects on which films are most urgently wanted, and to prevent waste of effort: if a central body of this kind received notice of prospective films before energy and thought had been expended on them, it would be able to advise the sponsors whether the subject was already being covered in a film, and when two independent sponsors suggested the same subject they could be introduced and offered the chance to pool their resources. If, after the war, the Films Division of the Ministry of Information can be built up into a permanent organisation it could undertake these advisory functions; but failing this it seems desirable that some national body, such as the Ministry of Health or the Medical Research Council, should form a medical films section. If this happens they would do well to enter the field in earnest, and in order to make the best use of their funds should devise a long-term plan and form a film unit of their own, employing it continuously. (That such a scheme can be successful was proved by the success of the old General Post Office unit.) Further, once they had started they would probably act also as coördinating and distributing centre, and from the medical teachers' viewpoint this centralisation would be ideal.

Meanwhile, there seems to be no lack of activity around medical films; most of the essential requisites—loan library, technical advice, reference files, impartial evaluations of merit, facilities for copying, and finance for new films—exist in embryo form in different places. But a central body is required to preside over their birth and infancy, and to bring them up in one happy family. This is a task worthy of the paternal interest of one of the philanthropic trusts.

Emergency Rations

THE committee on the care of shipwrecked personnel,[1] set up by the Medical Research Council in 1941, insisted that water is of more importance than food in preserving life. Without water a man has little chance of living more than 10 days, while in a lifeboat a shipwreck survivor would probably not last as long; the longest recorded survival is 11 days. The body requires each day nearly a litre of water to cover the unavoidable losses from skin and lungs, and in the urine. The daily intake of water has to be a relatively large proportion of this figure if the body is to avoid the unpleasant consequences of "water debt." Experiments carried out in England, in which men on lifeboat emergency rations drank various amounts of water, showed that there was little difference in condition between the men receiving 200 c.cm. of water daily and those receiving none; but as the water ration increased the good effect became relatively more striking, and at 700 c.cm. a day in some cases the body-weight remained steady. In general it was found that a man could keep in fairly good condition on 500 c.cm. a day. The same conclusion has now been reached by American workers. Both British and American recommendations are that a minimum daily intake of 500 c.cm. should be aimed at.

IVY and his collaborators mention two methods for removing salt from sea-water, and similar methods have been explored in this country. Thus a process similar to the one referred to by IVY as the 'Decalso' (Permutit, USA), which uses mixed ion adsorbents, was being employed in the analysis of biological material in the summer of 1942,[2] and was, as far as is known, first applied to the purification of sea-water at that time. It has since been adopted by the RAF and the Fleet Air Arm. The MRC committee recommends reliance on stored water, and

1. Some of the results of the work initiated by this committee are included in War Memo No. 8, "A Guide to the Preservation of Life at Sea after Shipwreck" (HMSO, 1943). Results of work on similar lines by American investigators have recently been published (Ivy, A. C., Futcher, P. H., Consolazio, W. V., Pace, N., Gerrard, E. J. *Nav. med. Bull. Wash.* 1944, **42**, 841. *J. Amer. med. Ass.* 1944, **125**, 494) confirming, in general, the advice given by the Medical Research Council.
2. Platt, B. S., Glosk, G. E. *Biochem. J.* 1942, **36**, 10.

War Memo No. 8 gives a plan by which this can be utilised most efficiently. On the first day adrift, provided there is no excessive sweating, no water should be drunk, for the body contains a litre or more of "spare" circulatory water. Thereafter water should be issued at the rate of 500 c.cm. a day until the last 500 c.cm. (per man) is reached. At first sight this seems a rather liberal allowance when the supply is so limited, but the procedure is justified because men are rarely adrift for more than a week without being picked up. Early in the war men were dying of thirst in lifeboats carrying an ample supply of water, owing to a mistaken notion that it was necessary to calculate the water ration on a period as long as 60 days. Experiments in England and more recently in USA have shown the value to the man on the raft of small supplements of sea-water, permissible only when the ration itself is practically salt-free. *War Memo No. 8* did not recommend sea-water supplements, owing to the danger that the safe limits might in practice be exceeded; but it did allow rinsing the mouth with sea-water, and with frequent rinsings a considerable supplement is in fact obtained since with each rinse about 10 c.cm. of water is retained. IVY and his co-workers in America, on the other hand, started to exploit this ability of the body to take sea-water; they developed various salt-free liquid rations—e.g., tomato juice and consommé—which were to be diluted with sea-water in the ratio 5 parts of liquid to 1 of sea-water.

If the man on the raft can be allowed some food it will spare his body tissues, and, whatever his daily ration of water, will prevent his condition deteriorating so rapidly. But food to supply full calorie requirements cannot be carried without jeopardising the water-supplies. Moreover, in the British experiments it was found that men with a water intake down to 500 c.cm. a day would not tolerate a daily food intake supplying much more than 500 calories, and indeed some subjects failed to take even this much. The American workers and the MRC memo aim at a calorie level of this order. Emergency rations in existence before the war, based on experience only, also had about this calorie value. The way in which these 500 calories are provided is based on principles soundly established by experiment and experience:

1. Protein is contra-indicated because when it is metabolised urea is produced which requires extra water for its excretion—e.g., after an ounce of pemmican there is a 50% increase in the rate of urine excretion over the next 3 hours; this is not seen after eating biscuits or chocolate.
2. Carbohydrate is desirable because it spares body proteins; hence it reduces the endogenous urea excretion and further reduces the necessary urine excretion.
3. Fat is desirable because of its protein-sparing effect and because, according to American investigators, it reduces the nausea produced by a high carbohydrate diet.
4. The diet should supply the maximum amount of water of oxidation; protein gives less than its own weight of water when oxidised, carbohydrate its own weight, and fat a little more.
5. The chloride content of the diet should be minimal.
6. It should have good keeping quality under a wide range of climatic conditions.

The ideal ration then contains no protein or salt and the maximum amount of fat. But as the protein-sparing effect of fat fails when more than half of the diet is fat, the physiological ideal is 50% fat and 50% carbohydrate. The diet should also be palatable and easy to eat; variety is an important factor in palatability, a point perhaps overlooked by BUTLER and by IVY and his co-workers. The Ministry of War Transport emergency ration contained pemmican, nearly half of which is nitrogenous matter; the old-style American raft ration was also rich in protein because it included pork luncheon meat. Both rations therefore were to be condemned on their diuretic effect. The ration now recommended by IVY is a tablet ration of butterscotch (i.e., sucrose-lipid-citric-acid tablets) with multivitamin tablets and chewing-gum. The vitamins are included mainly because the men have faith in their powers; the chewing-gum to promote salivation, clean the mouth and release nervous tension. The important food is the butterscotch; this contains 20% fat and is free from salt and protein, so it approximates to the physiological ideal. It falls down however in the matter of variety; even the sweet-toothed American might be expected to quail at the prospect of a diet consisting exclusively of butterscotch. The longest test of the diet reported is one in which 18 men took the diet for 4 days; it was tolerated well in this short test. The tablets soften when kept in the heat but do not deteriorate. The MRC ration, on the other hand, has managed to achieve variety; there are four items:

Biscuits of high fat content ..	20% fat
Butter fat	100% ,,
Chocolate	40% ,,
Full-cream sweetened condensed milk	20% ,,

An ounce of each of these foods is recommended daily. The total fat content is not far short of the ideal 50%. The condensed milk is included because it is popular (it was used as a lifeboat ration in the last war, and has been used by enemy castaways in this war); it contains only a little protein (5 g. per ounce). All the items keep well. The ration has stood up to more severe trials than those to which the American tablet ration has been subjected—in one instance 20 men lived on the ration, with a limited water intake, for 10 days; in another, 3 men lived on it for 6 days with no fresh water at all in the last 2 days. In both cases the subjects still found the diet appetising and acceptable at the end of the test. Thus the American and British workers have come to substantially the same conclusions concerning the food and water requirements of the man on the raft, but the MRC committee seems to have shown more enterprise than the Americans in prescribing a diet to meet those requirements.

A Year's Work on the Rh Factor

THE past year has brought us much new information about the cause, prevention and treatment of fœtal hæmolytic disease. In 92–94% of cases this is due to Rh-negative mothers becoming sensitive to the blood of their Rh-positive babies[1 2]; and the proportion due to Rh sensitisation is higher still if the rare immunisation of Rh-positive mothers is taken into account. The small remainder may be due to

1. Levine, P., Burnham, L., Katzin, E. M., Vogel, P. *Amer. J. Obstet. Gynec.* 1941, **42**, 925; Boorman, K. E., Dodd, B. E., Mollison, P. L. *Brit. med. J.* 1942, ii, 535 and 569.
2. Race, R. R., Taylor, G. L., Cappell, D. F., McFarlane, M. N. *Brit. med. J.* 1943, ii, 289.

sensitisation to the group factors AB and possibly M, N or P, but cases of the last three have yet to be described. The doctor can now give definite advice and practical help in what may be a very delicate sociological problem, and the expert serologist can with certainty decide whether a husband can father a normal child with a sensitised wife.

Ideally Rh testing should be done in all antenatal clinics, but the technical difficulties are so great that only comparatively few of the larger laboratories are likely to be able to cope with the work. In our present issue MURRAY records the opening stages of an investigation of unselected antenatal mothers. Of the first 200 women 12·5% were Rh-negative. At least 2 of these 25 Rh-negatives actually had an Rh antibody, and these women may expect a baby with hæmolytic disease. According to BOORMAN, DODD and MOLLISON,[3] "the main importance of making Rh grouping tests during pregnancy as a routine is the detection of Rh-negative women to ensure that if they require blood-transfusion they shall not receive Rh-positive blood." But recent work shows that a more complete investigation than the simple detection of the negatives is desirable. The same workers found an Rh antibody in the serum of 93 out of 97 cases of fœtal hæmolytic disease, a proportion which seems rather high in view of the findings of WIENER,[4] though it agrees with the findings of RACE and his colleagues. In every family where fœtal hæmolytic disease is suspected, samples of whole blood from the father, the mother and any existing children should promptly be examined. If an Rh incompatibility between husband and wife is found, then the mother's serum should be titrated repeatedly for antibody content. If an irregular antibody is present in the mother's serum fœtal hæmolytic disease is highly probable; if no antibody is found on a single occasion the disease may still appear, since the severity of the affection of the infant is not directly related to the titre of the mother's antibody. In an established case it is advisable for pregnancy to end as soon as a viable child may well be expected, since there is no possibility at the moment of neutralising the maternal antibody by injecting appropriate group-specific polysaccharide. Many obstetricians are now practising induction a month to six weeks before term, and perhaps cæsarean section may be considered. By a family study it is often possible to predict the genotype of the unborn infant, particularly if any previous children are available for test; thus it is unnecessary to attempt any dangerous method of obtaining fœtal blood.

At the birth, group-O blood of the mother's Rh subgroup should be on hand in case either mother or child need it. Mother's subgroup is necessary for the child so that the injected cells cannot be harmed by the maternal antibody in the child's circulation. The blood used must come from a man who has never been transfused or a woman who has had neither transfusion nor pregnancy. In practice group-O Rh-negative blood cross-matched against mother's serum is usually employed, being free from danger. When the ABO group of mother and infant agree it is theoretically possible to give the child the mother's cells washed free from the plasma which contains the dangerous antibody, but this is seldom practicable. A suitable donor is more likely to be found among the mother's than the father's relations. The father's blood should never be used. Failing Rh-negative blood, in extreme emergency group-O Rh-positive blood may be used for the baby of a Rh-negative mother, but its benefit is likely to be transient and lysis with jaundice may occur. When the infant is born, a smear of cord blood is examined, and some suggest leaving the cord long to permit transfusion of blood into the umbilical vein. Recently successful transfusions into tibial bone-marrow have been reported, but the more usual route is intravenous by cutting down. The quantity of blood transfused may be calculated according to the formula

$$\frac{\%\text{ rise in Hb required}}{100} \times \text{blood-volume of infant}$$

and this usually means 150–250 c.cm. (The blood-volume is assessed as 40 c.cm. per lb. body-weight.) GIMSON[5] showed no immediate mortality in 18 infants of Rh-negative mothers transfused with group-O Rh-negative blood, compared with 6 deaths out of 17 cases treated by transfusion without regard to Rh grouping. There is a risk of antibodies being present in the breast-milk, so the child should not be put to the breast, and breast-milk should be brought to the boil before use to destroy any antibodies it contains.[6] The newborn baby should be given vitamin K, since deficiency may also complicate the picture.

Fœtal hæmolytic disease often misses the firstborn and even the second and third child, so the present tendency to small families reduces the risk of the disease. Until recently it was accepted that once an affected child is born all subsequent children will be affected with increasing severity, but it is now known that a woman who has had an affected infant may still give birth to a normal child, and that each successive infant is not necessarily more severely affected than the last. The development of the disease in the child will depend on the genetic factors operating, particularly on whether the father is homozygous (RhRh) or heterozygous (Rhrh). Clearly, the Rh-negative mother is more likely to become sensitised if every succeeding pregnancy provides the necessary antigenic stimulus—that is, if the father is homozygous. Thus:

Mating	*Children*
RhRh × rhrh	All Rhrh
Rhrh × rhrh	Rhrh and rhrh in equal proportions.

Rhrh children are likely though not certain to be affected. According to TAYLOR and RACE,[7] the incidence of homozygous (RhRh) fathers in affected families is very high indeed. Serological investigation of the Rh subgroups in the particular family may establish whether the father is homozygous or heterozygous. If the family of an Rh-negative mother already contains an Rh-negative child, then the father has proved himself heterozygous and there are equal chances of an insusceptible child and a susceptible one. While 90% of mothers of erythroblastic babies are Rh-negative, affected babies may also be born to Rh-positive women, and occasional

3. Boorman, K. E., Dodd, B. E., Mollison, P. L. *J. Obstet. Gynæc.* 1944, **51**, 1.
4. Wiener, A. S. *Arch. Path.* 1941, **32**, 227.
5. Gimson, J. D. *Brit. med. J.* 1943, ii, 293.
6. Witebsky, I. E., Heide, A. *Proc. Soc. exp. Biol., N.Y.* 1943, **52**, 280.
7. Taylor, G. L., Race, R. R. *Brit. med. J.* 1944, i, 288.

Rh-negative mothers "get away with" an apparently normal Rh-positive baby, even after several tragedies.

It may be asked why erythroblastosis is confined to 1 in 438 pregnancies,[8] and why in over 90% of cases Rh antigens can be inculpated instead of ABO groups, when incompatibility between mother and child is commoner in the latter. Thus 1 individual out of every 7 or 8 is Rh-negative; in 1 mating out of 8 the mother is negative and the father positive; in 1 pregnancy out of 10 the mother is Rh-negative and the fœtus Rh-positive; while in 1 pregnancy out of 5 the mother's serum contains isoagglutinins against the AB antigen present in the fœtal cells. The rarity of hæmolytic disease due to the ABO groups may be explained by the presence of group-specific substance A, B or O in the plasma of "secretor" babies, protecting their red cells. In any case anti-O is rare in humans and the 1 in 5 calculation only takes into account the A and B incompatibility with anti-A and anti-B. Moreover, 80% of persons are secretors of ABO substances. Thus the chances of ABO incompatibility affecting the fœtus are reduced to 1 in 25. Rh antigen, on the other hand, is present in the body fluids in only minute traces, according to BOORMAN and DODD,[9] and American workers have failed to demonstrate it at all, so it cannot block the Rh antibody from the red cells and tissues. There is no doubt, too, that mothers vary considerably in their reactivity to antigenic stimuli. Recently RACE[10] has described a coating factor in some sera which can combine with the Rh antigen without producing agglutination. Little is known about the coating factor except that it may be found in the serum of the mother of an affected infant whether an antibody is demonstrable or not.[11] Although transfusion, except in extremely acute cases, has reduced the immediate mortality of affected infants to almost nil, GIMSON does not believe that it has reduced the chance of the infant developing kernicterus, the serious cerebral involvement which develops in 10% of affected children, according to MCINTOSH[12]; but MOLLISON[13] suggests that on theoretical grounds early massive transfusion might be expected to lower the incidence of this complication.

Up to last summer it was generally recognised that different anti-Rh sera gave different results, 84% positive reactions being obtained by LANDSTEINER and WIENER[14] with their immune rabbit and guineapig sera, 70% positives with some human sera by WIENER,[4] and 86% and 87% positives with human sera by LEVINE and his colleagues.[15] Later in 1943 sera giving 30–35% positives were described by WIENER,[16] and by RACE and others.[17] The position was complicated by the serum anti-Hr of LEVINE,[18] JAVERT and KATZIN, which agglutinated all the negatives and some of the positives. In this country the first clear exposition of subgroups of the Rh factor was given in November, 1943, at the Royal Society of Medicine by RACE, who correlated the findings of the New York workers with his and TAYLOR'S results. The final plan which RACE, TAYLOR, CAPPELL and MCFARLANE[2] evolved was identical with that of WIENER[19] except that these workers[20] recognised one more gene than WIENER, by using a serum named St which WIENER had not yet found, but which may be identical with that called Hr by LEVINE.[18] With the addition of this serum it has been possible to detect directly the genotype in 80% of cases, whereas without it only 30% were detectable. The demonstration,[21] in a family study, of the eighth gene, Rhz, supports FISHER'S system of eight genes with three allelomorphic antigens described by RACE,[10] though the existence of the seventh gene Rhy has yet to be directly proved. Lately MURRAY[22] has tabulated a complete scheme of Rh antisera and their reactions and adopted a simple nomenclature of genotypes according to the sera with which the cells react. He also divides up the genotypes to show what antisera are likely to be produced by their antigenic stimulus and makes it clear that the babies of Rh-positive mothers are by no means free from the chances of fœtal hæmolytic disease. Obstetricians should be warned against the routine use of Rh-negative blood for transfusion without regard to the Rh genotype of the patient, because the average female patient is unlikely to be Rh-negative. Rh-negative donors are valuable and their blood should not be squandered; moreover, it *is* possible to immunise an Rh-positive mother with Rh-negative blood.

During the past year the greatest advances may have seemed academic, but they have made prognosis and therefore the choice of suitable donors much more accurate. Moreover, it seems that fœtal hæmolytic disease occurs in all mammals which carry their young in utero for a long period, although the disease is not so often recognised in animals as it is in humans, and "water-belly," the animal equivalent of hydrops fœtalis, is somewhat rare. In racing circles, however, isoimmunisation in pregnancy is becoming a grave anxiety to owners of blood-stock.

8. Javert, C. *Amer. J. Obstet. Gynec.* 1937, **34**, 1042.
9. Boorman, K. E., Dodd, B. E. *J. Path. Bact.* 1943, **55**, 329.
10. Race, R. R. *Nature, Lond.* 1944, **153**, 772.
11. Wiener, A. S. *Proc. Soc. exp. Biol. NY*, 1944, **56**, 173.
12. McIntosh, R. *Canad. med. Ass. J.* 1941, **45**, 488.
13. Mollison, P. L. *Arch. Dis. Childh.* 1943, **18**, 161.
14. Landsteiner, K., Wiener, A. S. *Proc. Soc. exp. Biol. NY*, 1940, **43**, 223; *J. exp. Med.* 1941, **74**, 309.
15. Levine, P., Katzin, E. M., Burnham, L. *J. Amer. med. Ass.* 1941, **116**, 825.
16. Wiener, A. S. *Science*, 1943, **98**, 182.
17. Race, R. R., Taylor, G. L., Boorman, K. E., Dodd, B. E. *Nature, Lond.* 1943, **152**, 563.
18. Levine, P. *Arch. Path.* 1944, **37**, 83.
19. Wiener, A. S. *Proc. Soc. exp. Biol. NY*, 1943, **54**, 316.
20. Race, R. R., Taylor, G. L. *Nature, Lond.* 1943, **152**, 300.
21. Murray, J., Race, R. R. Taylor, G. L., in the press.
22. Murray, J. 1944, in the press.

Nobel Laureates

THE 1944 prize for physiology and medicine has been awarded to Dr. Joseph Erlanger, emeritus professor of physiology in Washington University, St. Louis, and Prof. Herbert Gasser, head of the Rockefeller Institute of Medical Research, New York, for their studies of nerve reactions. The 1943 prize has been given to Prof. Henrik Dam, who left the Copenhagen Institute of Biochemistry in 1940 to work in America, and to Prof. Edward Doisy, professor of biochemistry at St. Louis University, for the discovery of, and research into, vitamin K.

THE annual meeting of fellows and members of the Royal College of Surgeons of England will be held on Thursday, Nov. 16, at 2.30 PM.

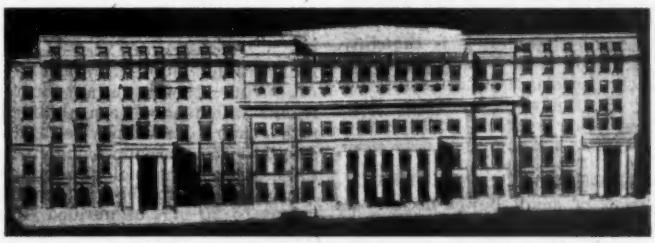
THE next session of the General Medical Council will begin on Tuesday, Nov. 28, at 10 AM, when Sir HERBERT EASON, the president will deliver an address.

Sir Robert McVitie Grant has given £70,000 to found a chair of dermatology at the university of Edinburgh. This is the first chair of its kind to be established in this country.

Annotations

A TRINITY OF COLLEGES?

IN its report for 1944 the Royal College of Surgeons puts the case for establishing the three Royal Colleges in the same or adjacent buildings, and invites the Physicians and the Obstetricians and Gynæcologists to move to Lincoln's Inn Fields and share the Surgeons' site. The council of the RCS hope to see a medical centre worthy of professional traditions, and to achieve this they would be willing, if good cause were shown, to move elsewhere. But they point out that Lincoln's Inn is well placed, being easily reached from the London hospitals and the railway terminuses, and well served by bus and Underground. Lincoln's Inn Fields is the largest square in London; it is quiet, with little through traffic, and has ample parking-space for cars. Moreover, the presence of the Honourable Society of Lincoln's Inn gives it a suitably collegiate atmosphere, and the address is known throughout the world as the home of the RCS museum. The college owns the freehold of Nos. 35 to 45, Lincoln's Inn Fields, a site twice the size of that occupied by its buildings before the war; this would allow of the erection of a building as large as the present college to the east, and a rather smaller building to the west. A decision by the other colleges is considered urgent, because the RCS has to provide for the return of its research laboratories, find accommodation for the new professor of human and comparative pathology, and house the 27,000 museum specimens now stored in the country as well as the large number of new specimens already promised. The RCS declares itself willing "to assign to common use or to the specific use of any other college any existing part of the present college buildings in exchange for equivalent accommodation on some other part of the site," and it is also prepared to share the existing or restored museums, laboratories and libraries with the other colleges. This offer should reduce the natural fears of the other colleges that they might become junior rather than equal partners.



The tentative design for a façade here reproduced shows one way in which the site could be adapted.

INTESTINAL SYMBIONTS IN CHEMOTHERAPY

DRUG, parasite and host have normally interacted in bacterial chemotherapy in such a fashion that the more antibacterial the drug, and the less its influence on the host, the more effective was it as a chemotherapeutic agent. Development of sulphonamides active in intestinal infections has shown that this is not always the case, for it leaves out of consideration the majority of micro-organisms which are associated with higher organisms. This majority—a fourth party in the chemotherapeutic system—are those organisms normally called commensal. If they were simply commensal the host would be indifferent to their inhibition; but instances are accumulating in which inhibition of components of the intestinal flora leads to nutritional deficiencies in the host.[1] The relationship between a host and its familiar micro-organisms can therefore be symbiotic. This was first established in animal experiments but more recently has been observed with respect to aneurine in man.[2] Here it was found that not all individuals could be rendered deficient in the vitamin by stopping its intake. On an identical diet the fæces of subjects not susceptible to deficiency contained much more of the vitamin than did those of susceptible subjects. A person not ordinarily susceptible to aneurine deficiency could be made susceptible to it by giving succinylsulphathiazole by mouth, and this was concluded to act by suppressing intestinal bacteria which synthesise the vitamin. It has been loosely suggested that the gut is sterilised by such drugs, but in animal experiments the numbers of bacteria present remained approximately unchanged during treatment. The flora, however, was qualitatively changed, enterococci replacing coliform organisms.[1] A similar effect of succinylsulphathiazole on the nicotinamide balance of man has also been demonstrated.[3] The conclusion that the drug acted through its effects on the intestinal flora appears sound, although it was not supported by a microbiological investigation; some intestinal bacteria are known to synthesise nicotinamide derivatives. There is evidence from animal experiments that folic acid and biotin balances are also upset by sulphonamide action.

These results carry implications both in chemotherapy and nutritional investigations. Thus the vitamin level of a patient will influence not only his chances of recovery but also his susceptibility to the undesirable effects of drugs given to attack intestinal parasites, if treatment is protracted. And beyond this there is the possibility that if we give extra vitamins to protect the patient against deficiency we may at the same time interfere with the antibacterial action of the sulphonamides. Actually aneurine, nicotinamide, folic acid and biotin are not potent antagonists to sulphonamide action, but the last three are known to have a limited antagonistic effect in vitro. In acute infections the difficulty will not arise, but a watch for B-vitamin deficiencies is clearly required when sulphonamides are being given for long periods, and it remains to be seen whether large doses of these factors will reduce the efficacy of the treatment.

1. Keresztesy, J. C. *Ann. Rev. Biochem.* 1944, **13**, 388.
2. Najjar, V. A., Holt, L. E. jun. *J. Amer. med. Ass.* 1943, **123**, 683.
3. Ellinger, P., Coulson, R. A., Benesch, R. *Nature, Lond.* 1944, **154**, 270.

ADVISING THE HOUSEWIFE ABOUT FOOD

THE war has taught us some good food habits which the Children's Nutrition Council would like to see preserved. With the coming of peace and, perhaps, relative plenty it should also be possible to develop some new and even better habits about eating. The editor of the council's *Bulletin* would like to see a "pervasive and patient campaign" carried on, especially among housewives.[1] In this campaign the women's organisations would play a prominent part, but a central staff would also be needed as well as news-letters, bulletins, and a small body of salaried organisers. Costs could be low: but they would have to be guaranteed. The Ministry of Food already has a special department with a staff of about 25, and an experimental kitchen for the trial of new recipes. This sends out a regular service of news-letters. Some 40 food-advice centres are also scattered about the country, each staffed by two or three qualified women. These usually have a shop window for displays designed to interest and influence housewives. From such centres the

1. *War-Time Nutrition Bulletin* No. 32. October–November, 1944.

organisers can arrange lectures and demonstrations in village halls, clinics and factories. In addition the voluntary organisations have provided "food leaders" who act under an honorary organiser for borough or county. These spread useful information by word of mouth among their neighbours, arrange window displays, lectures and brains-trust programmes, and keep their organiser in touch with local problems. They are prepared by a short course of lectures, and given a badge, but they do not themselves lecture unless they are otherwise qualified to do so.

To carry on the food-advice service at the present level would probably cost, the article estimates, £70,000 a year. A drastically curtailed service, it is thought, might be provided for £15,000. This would provide a food-advice council loosely associated with one of the Ministries and drawing its funds partly from that Ministry and partly from other sources, such as the local authorities.

MASSIVE RESECTION OF SMALL INTESTINE

EVER since the resection of small bowel became a feasible procedure there have been differences of opinion on how much can be removed without ill effects and on the consequences of removing large portions, the reason being, no doubt, the wide individual variation in the amount of gut necessary to support life and health. People have survived, for several years at least, with only 3 feet of combined duodenum and jejunum and no ileum. Resections of this magnitude, however, usually result in progressive emaciation and loss of strength, and death within a few months. From a review of 257 cases in which more than 6½ feet of small intestine had been resected, Haymond [1] concluded that removal of up to a third of the total could be followed by a return to normal function, but that resection of anything over half, or 11 feet in average people, was likely to give poor results. The length of bowel removed gives no true indication of that which remains, because the small intestine varies considerably in length—Bryant's [2] figures ranged from 10 feet to 28 feet 4 inches in 160 adults. His measurements were made at autopsy, and when the mesentery and the intestinal musculature are alive and intact the gut is a great deal shorter—possibly half the autopsy length or less. But the autopsy measurements are comparable with those the surgeon makes on resected bowel after operation. Of the two cases reported in this issue, that described by Cosh is an example of the common unfortunate sequelæ of the operation, while Holman's case is remarkable for its freedom from subsequent trouble up to 18 months from operation. A continued follow-up of the latter case would be advisable because complications may develop later than this. The commonest sequel of extensive resection of small bowel is a fatty diarrhœa, similar to that of sprue, and due to the incomplete digestion and absorption of food. In one case [3] carbohydrate was well assimilated but 25% of the protein and 45% of the fat ingested was lost in the stools. The fat is lost chiefly in the form of fatty acids, which combine with any available calcium and so reduce its absorption to low levels. The result is a low blood-calcium, associated with which are attacks of tetany which respond to a diet high in calcium and vitamin D but low in fat. The diarrhœa is not controllable by drugs but can be combated by a diet with plenty of carbohydrate, an adequate amount of protein, and little fat. To allow for faulty absorption the calorie intake must be generous. Macrocytic anæmia does not seem to be a sequel to extensive small-bowel resections, as it sometimes is in cases with intestinal short-circuits or strictures.[4] Probably the absorption of products of bacterial activity determines its onset in these cases.

1. Haymond, H. E. *Surg. Gynec. Obstet.* 1935, **61**, 693.
2. Bryant, J. *Amer. J. med. Sci.* 1924, **167**, 499.
3. West, E. R., Montague, J. R., Judy, F. R. *Amer. J. digest. Dis.* 1939, **5**, 690.
4. Barker, W. H., Hummel, L. E. *Bull. Johns Hopk. Hosp.* 1939, **64**, 215.

CURARE IN ANÆSTHESIA

CURARE is an important pharmacological tool for laboratory investigations. Its action is confined to paralysing skeletal muscle by interrupting impulses at the myoneural junction; it thus enables animals to be immobilised without interfering with their central nervous system. The rapid excretion of the drug allows its paralysant action to be utilised in human beings in the treatment of various spastic [1] and convulsive states,[2] such as spastic paralysis, dystonic athetosis and advanced parkinsonism. In these diseases its action is but palliative. The work of Cole,[3] Mitchell,[4] West [5] and others indicates that curare may be a life-saver in the treatment of tetanus; the spasms are controlled and the successful results which have been obtained suggest that anoxia rather than toxæmia may be the dangerous feature of this disease. Curare is now being investigated as an adjuvant to anæsthesia. A biologically standardised preparation, 'Intocostrin' (Squibb), is available, 1 c.cm. being equivalent to 20 mg. of purified drug. With it muscular relaxation is readily obtained in subjects resistant to anæsthesia, enabling such procedures as abdominal section and laryngoscopy to be carried out with ease. Even in average subjects it is useful in obtaining relaxation without "pushing" the general anæsthetic. Griffith and Johnston [6] reported a small series of patients, and Cullen [7] a much larger one in whom intravenous curare was successfully used to produce muscular relaxation when the patients were but lightly anæsthetised. The drug is not without its dangers. Overdose produces intercostal and diaphragmatic paralysis with cessation of respiration. This may be and usually is of short duration, but artificial respiration should be started immediately, and a pharmacological antidote such as physostigmine or 'Prostigmin' be kept at hand. Should these remedies be withheld, death may result. In addition, Perlstein and Weinglass [8] observed that, in spite of the maintenance of artificial respiration, long-continued curarisation in dogs is lethal, an effect enhanced by atropine. The effect here may be due to involvement of the cardiac neuromuscular mechanism. In any case their observations suggest caution in the use of curare during tetanus or long operations, and the avoidance of atropine when curare is used. Reports so far suggest that curare may have a definite place in anæsthesia, but that the time is not yet ripe for its general adoption. One thing seems certain—curare must not be regarded as a substitute for the skilful use of anæsthetic agents. Much scientific clinical investigation remains to be done by those who are thoroughly conversant with the action of the drug and have the means and ability to counter inadvertent overdose.

1. Burman, M. S. *Arch. Neurol. Psychiat.* 1939, **41**, 307.
2. Bennett, A. E. *Amer. J. med. Sci.* 1941, **202**, 102.
3. Cole, L. B. *Lancet*, 1934, ii, 475.
4. Mitchell, J. S. *Ibid*, 1935, i, 262.
5. West, R. *Ibid*, 1936, i, 12.
6. Griffith, H. R., Johnson, G. E. *Anesthesiology*, 1942, **3**, 418.
7. Cullen, S. C. *Surgery*, 1943, **14**, 261.
8. Perlstein, M. A., Weinglass, A. *Amer. J. Dis. Child.* 1944, **67**, 360.

EDITORSHIP OF THE LANCET

THE Proprietors of THE LANCET announce with much regret the retirement of Dr. Egbert Morland from the editorial chair. Dr. Morland joined the staff in 1915 and has been editor since 1937. He is succeeded by Dr. T. F. Fox, with Dr. E. Clayton-Jones as assistant editor.

The Aylesbury office of THE LANCET has been closed. Henceforward all communications should be addressed to the London office, 7, Adam Street, Adelphi, WC2. (Tel.: Temple Bar 7228.)

Mr. J. B. HUNTER has been selected dean of the faculty of medicine of the University of London for the period 1944–46.

Special Articles

DEMOBILISATION

STATEMENT FROM THE CENTRAL MEDICAL WAR COMMITTEE

SOME considerable time ago, at the request of the Ministry of Health, a special subcommittee of the Central Medical War Committee, known as the Demobilisation Committee, was appointed to advise on the problems connected with the postwar release of medical practitioners serving with HM Forces. The Government had announced that the main considerations which would determine priority of release would be age and length of service; and the task of the committee was to consider what detailed procedures, under this general plan, would best combine justice to the serving doctors and satisfaction of the more urgent needs of the depleted civilian medical services. Most of the recommendations made by the committee were accepted by the Ministry of Health, though in some instances with modifications. The Government's proposals have now been published in a white-paper.[1] A brief account of the plan follows, with special reference to medical practitioners, whom the white-paper does not specifically mention.

Summary of Government's Plan

1. General demobilisation must await the total defeat of the Axis Powers. All that is contemplated at present is the reallocation of man-power between the Forces and civilian employment when Germany has been defeated and while the war with Japan is still in progress.

2. As there can be no break in the war effort, military requirements will override all other considerations. The requisite control of civilian labour will be maintained and compulsory recruitment for the Forces will be continued. At the same time it will be possible to "bring relief to the men who have served for long periods" and, through continued recruitment, to "enable more of them to return to their homes." This reallocation of man-power will be "on a substantial scale," but "the rate of reallocation must differ as between the three Services."

3. The plan provides for two separate methods of selecting men for return from the Forces. The larger group, designated class A, will be selected for *release* according to age and length of service. In addition, there will be a limited provision for the *transfer* from the Forces of men who are qualified for "urgent reconstruction work." This smaller group, designated class B, will be required mainly to supplement the labour force available for building houses, but will include "a limited number of individual specialists, for whose transfer application may be made through Government Departments in accordance with existing arrangements." So far as doctors are concerned, the description "specialist" is not used here in its professional sense but is applicable to all medical officers.

4. Although the Services will make every effort to release men in their turn in accordance with the plan, in whatever theatre of war they may be serving, no man will be released or transferred if his retention is considered necessary on military grounds; nor will any man be released or transferred if he prefers to volunteer for a further period of service. In short, there will be no compulsory return to civilian employment but there may be compulsory retention in the Services of men due for such return, either in class A or in class B.

CLASS A

5. Within class A there will be special priority for men of 50 years of age and over, who will be released before other men if they so wish. Otherwise, men in class A will be released by release groups determined by a combination of age and length of war service on the basis that two months of service are equivalent to one additional year of age. For example, a man of 22 with four years' service will be in the same release group as a man of 40 with one year's service. "In general, war service means whole-time service in the Armed Forces since the 3rd September, 1939, which counts for Service pay."

6. The release of men in class A will begin as soon as practicable after the defeat of Germany, but there will necessarily be a pause to enable the Services to identify the men who are to be released first and to arrange for the return to this country of those who are overseas. The number of releases in class A will depend on the reduction that is found to be possible in the strength of the Forces and also on the number of new recruits called up.

7. To assist in resettlement, men in class A will receive, on release, eight weeks' leave with full pay and certain allowances, and additional leave and pay will be given in respect of foreign service. When the period of leave has expired these men will be placed to a special class of Reserve, from which they would be recalled only in an extreme emergency. They will be able, on release, to exercise their right of reinstatement in their former civilian employment and, while receiving regular Service payments, they will not be regarded by the Employment Exchanges as "subject to any powers of direction which are otherwise generally operative." The benefits received by men in class A will be available also to men discharged on medical grounds. The present arrangements for release on compassionate grounds will be continued.

CLASS B

8. Transfers in class B will be small in number in proportion to releases in class A and will not begin until a start has been made with the releases. The actual numbers for transfer will be determined from time to time by the immediate requirements of the "reconstruction employments" and the extent to which these requirements will be met by releases in class A and by transfer from other civilian work. So far as possible, the selection of the required number of men from a particular occupational class for transfer in class B will be based on the principle of age and length of war service.

9. Men transferred in class B, since they will leave the Forces out of their turn, will not be entitled to the same benefits as those released in class A. They will be given only three weeks' leave before being placed to the Reserve, and payments due in respect of foreign service will be held in suspense until after the end of the war. Men in class B will be under direction and will be liable to be recalled to the Forces if they discontinue the civilian work for which they were transferred. If this is not the work in which they were formerly engaged, their reinstatement rights will be preserved.

10. A man will not be transferred in class B against his wish if he prefers to await his turn for release in class A. "Once, however, a man has been transferred in class B he will not subsequently be eligible to apply for inclusion in class A."

11. Both class A men and class B men may, immediately on release or transfer, apply for a pension for disablement due to war service. A scheme of war gratuities by way of reward for service will be announced later.

12. The general arrangements described above will apply to women as well as to men, "with the addition that married women will have priority over all others if they so desire."

The Special Position of Medical Officers

As has been stated above, medical officers are not specifically mentioned in the white-paper. The general arrangements proposed will of course apply to them as to other members of the Forces. So far as class B is concerned, they are within the category of "specialists" who will be transferred, not in groups, but individually on application made through a Government department. In practice, the recommendations for transfer will be made by the Central Medical War Committee after consideration of applications submitted through the local medical war committees or, in appropriate cases

1. Reallocation of Man-Power between the Armed Forces and Civilian Employment during any Interim Period between the Defeat of Germany and the Defeat of Japan. (Cmd. 6548.)

in the London area, through the committee of reference. In short, the machinery set up for the recruitment of medical practitioners will "go into reverse" for the purpose of the reallocation procedure.

The total number of transfers in class B will be limited and it is not to be expected that any particular group of "specialists" will be allowed a disproportionate share of such transfers. It is probable, therefore, that the strengthening of the hard-pressed civilian medical services will depend mainly on releases in class A, and the question arises whether the numbers of medical officers whom the Services will be able to release will be such as to meet the urgent civilian needs and to ensure equality of treatment in respect of release between medical officers and other members of the Forces.

It is clear that the requirements of the Services in respect of medical officers will continue to be heavy after the defeat of Germany, both because of the high incidence of sickness in the Far East and because the resources of the Emergency Medical Service will not be available there. Moreover, some considerable time may elapse after the fighting has ceased in Europe before medical officers can be made available in sufficient numbers for service in the Far Eastern theatre. It may well be, therefore, that the requirements of the Services at the end of the European war will be such as to make it impossible to allow the medical profession its proportionate share of releases in class A under the general reallocation scheme.

It appears that the number of releases of medical officers will be determined largely by the number of civilian practitioners available for recruitment, and this in turn will depend on the Government's decision as to the limit of age for continued recruitment after hostilities in Europe have ceased. On this matter the white-paper gives no definite information but merely states that "in order to increase the releases in class A and to compensate for the transfers in class B, numbers of young men at present deferred, particularly in the munitions industries, will be called up for the Forces."

The Demobilisation Committee recommended the continued recruitment of young medical practitioners who are within five years of qualification or are below the age of 28, and this recommendation was accepted by the Ministry of Health. But, in view of later information as to the probable needs of the Services, it now appears that the continued recruitment of doctors will be desirable up to a somewhat higher age, perhaps in the region of 35, even if this age should be above that fixed by the Government for recruitment generally. The Central Medical War Committee has decided to recommend accordingly through the Ministry of Health.

A special consideration which has influenced the committee is the impossibility of recruiting, from practitioners within five years of qualification, the specialists —the word is used here in its professional sense—who will be required to replace those who are due for release in class A and those whose transfer in class B will be recommended. Apart from this, it is clearly important that the practitioners available for recruitment should be sufficient in number to enable serving officers generally to be released in their turn under the Government's scheme in order that their future prospects in civilian practice may not be unfairly prejudiced.

The committee has in mind the fact that the needs of the medical schools and associated hospitals, both in respect of the teaching of undergraduates and in respect of the postgraduate instruction of medical officers returning from the Forces, will be likely to give rise to applications for class B transfers. Every effort will be made to deal justly with such applications in the light of exact information to be obtained from the schools regarding their comparative needs, and with due regard to the fair distribution of the permitted number of class B transfers among the various spheres of professional work.

Reference has been made to the postgraduate instruction of practitioners returning from the Forces. It may not be generally known that, some years ago, the British Medical Association foresaw this need and urged the Government to prepare suitable arrangements. The matter is now in the hands of the Central Medical War Committee and discussions are proceeding with the Ministry of Health. The aim is to ensure, not only that refresher courses and clinical appointments are available but also that appropriate financial arrangements are made in order that no man who is in need of professional rehabilitation, and no suitable candidate who wishes to continue his interrupted education with a view to specialisation, will be unable to find the opportunity he seeks through lack of means.

LIVERPOOL CHAIR OF CHILD HEALTH

THE new department of child health of the University of Liverpool was opened by Miss Florence Horsbrugh, parliamentary secretary to the Ministry of Health, on Oct. 27. Dr. N. B. Capon, the first holder of the chair, will be director and have his headquarters at Alder Hey Hospital, where three wards have been set aside for a teaching and research unit, though the whole hospital complement of 950 beds will be available for the work of the department. Space for a lecture theatre, director's room, museum, and rooms for students, has been found by converting another ward, and it is hoped to add more teaching and research rooms at the end of the war when it is thought another ward can be spared for development. In addition, all the wards of the Royal Liverpool Children's Hospital will be available for teaching and research work, and rooms are provided there for the use of the director and his first assistant, and for research. This hospital has a city branch with 125 beds, and a branch at Heswall with 250 beds; there will thus be in all 1325 beds available for teaching in the department.

The department has been set up through the combined activity of the Liverpool Council, Liverpool University, and the Merseyside voluntary hospitals with the aim of teaching child health to medical undergraduate and postgraduate students, and of studying problems of child health. It therefore represents an important experiment in coöperation between voluntary and municipal agencies. There are advantages in putting the headquarters at Alder Hey—the municipal hospital —because those working in the department will have ready access to infant welfare clinics, child-guidance clinics, and clinics for tuberculous and rheumatic children. The teaching will thus be well rooted in preventive and social medicine.

Besides the director, whose appointment is part-time, the staff is to consist of the three present university lecturers in clinical pædiatrics, a first assistant (a clinician holding appointments in both hospitals), a second assistant selected from the staff of Alder Hey, and several registrars, three of them—medical, surgical and orthopædic—at the Royal Liverpool Children's Hospital, and one or more resident at Alder Hey. In addition there will be research-workers and several senior residents at both hospitals.

The expenses of the new department are being borne by the three responsible bodies: thus the capital outlay for furniture and equipment is being shared by the city council and the university, except that the Royal Liverpool Children's Hospital will provide its own equipment. The salaries of the director and his first assistant will be shared by the city council and the university, while the second assistant will receive an honorarium from the university in addition to his usual salary from the city council. The registrars at the Royal will continue to be paid by that hospital. The council will provide a laboratory technician and a secretary at Alder Hey, and the university will make an annual grant to the department's expenses. The medical correspondent to the *Times* (Oct. 27) notes that before the war the English provincial universities were spending only £400 a year on pædiatric training or research; London with its 12 schools only £1400.

We pointed out in 1942 that in 1939 seven provincial universities allotted only 5½*d.* in each £100 of their grant money to the special teaching of child health; yet £3 million a year is spent on child welfare and £4 million on the school medical services. The new chairs of child health established in England during recent years follow the pioneer lead of Edinburgh which has had a department of child life and health since 1931.

MEDICINE AND THE LAW

Overdose of Carbachol

THERE were two interesting features in the case in which Mr. Justice Hilbery gave judgment against Savory and Moore Ltd., on Oct. 26. The first was the nature of the negligence alleged. Flight-Sergeant Simpson died in the Cowley Road Hospital at Oxford after an injection of 'Moryl' (carbachol *BP*) which was said to have been 400 times greater than the correct dose. Dr. Arpad Lovas had prescribed an injection of one ampoule of moryl; he gave evidence that the medical profession, both in Britain and on the Continent, recognised an ampoule as synonymous with a dose; he had never heard of more than one dose being packed in a single ampoule. Savory and Moore, as the judge found, had been packing the drug in crystal form (which was 400 times too strong for internal use) in ampoules sold with printed instructions that ½–1 ampoule was the correct dose but with no warning that moryl in dry form in an ampoule was not for internal use. This, in the judge's view, was negligence justifying the award of damages. Judgment was entered for the widow and the co-administratrix of the dead man's estate in the sums of £1650 under the Fatal Accidents Act and £350 under the Law Reform Act, with costs. Dr. Lovas, during his cross-examination, said that, in ordering an ampoule of moryl to be given, he had never seen the drug in crystalline powder form in an ampoule.

The second point of interest was that the plaintiffs were charging negligence or breach of duty, and were suing for damages, not only against the chemists and druggists who supplied the moryl in this fashion but also against Dr. Lovas, the sister who administered the injection, and the corporation of Oxford as the hospital authority. The judge declared at an early stage that there was not a shred of evidence against the sister. He also dismissed the claim against Dr. Lovas, against whom he could find no negligence. He awarded costs to these two defendants and to the corporation against Savory and Moore Ltd. A stay of execution was granted, pending a possible appeal. Had the sister been found negligent, there would have been a question whether the hospital authority could be liable in damages as her employer. In Strangways-Lesmere *v.* Clayton in 1936 it was held that the administration of a dose by a nurse was not a "ministerial act" and that the hospital was not liable. In Dryden *v.* Surrey County Council and Stewart in the same year, where plugging had not been removed and the medical practitioner was held liable, the hospital was declared not to be liable for the negligence of nurses in matters of professional skill.

STREPTOCOCCAL ENDOCARDITIS PRODUCED EXPERIMENTALLY

LARGE verrucose lesions on the heart valves of pigs are commonly due to infection by *Erysipelothrix rhusiopathiæ* organisms, but Hont and Banks [1] have described large yellow cauliflower-like growths in the left atrioventricular valve of pigs caused by streptococci. Of two strains examined one did not belong to any of Lancefield's groups A, B, C, D or G, and was not pathogenic to mice, but the second was a group D strain and large doses killed mice. Two young pigs from a healthy herd were given 3 and 4 intravenous doses of mixed culture containing both streptococcal strains. The doses were given at intervals of about a week and the pigs were killed a week after the last dose. One showed severe endocarditis similar to that seen in the naturally affected pigs and large numbers of group D streptococci were demonstrated in the lesions. In the second pig only slight endocarditis was produced but there was a severe streptococcal epicarditis. An uninoculated pig from the same healthy herd showed no lesions.

1. Hont, S., Banks, A. W. *Aust. vet. J.* 1944, **20**, 206.

In England Now

A Running Commentary by Peripatetic Correspondents

WE are watching concentrated evolution at the Boys' Club. With their upbringing they are aggressive individualists and have no conception of working for a community. Even playing for a team is satisfactory only as long as it is winning, and now that they have at last believed that the helpers are not paid the boys are trying to fathom what ulterior motive there can be in helping. The first glimmerings of a social conscience come, oddly enough, from the gangsters. We make a point of putting them in charge of things; at first their underlings are bullied unmercifully, but the underlings are used to that. Then, as the gangsters find that the helpers ask their opinion on weighty matters, so they begin to use their power to administer a rough justice and within a surprisingly short time most of them have lost their spiteful characteristics. Occasionally we find a less tractable type, but the treatment is essentially the same. If these boys had fought their way to the top instead of being appointed by a higher power, their gangster outlook would have been accentuated by fear of revolution. It's all too simple.

We are now beginning an experiment in Town Planning. They are fond of model-making. We have found them half a ping-pong table and built it up with papier-maché to form an "undeveloped land" with mountains and a coast. Little groups of them—as pioneers—are engaged in building railways with matchsticks for sleepers and wire for rails. Their choice of building inevitably concentrates on seaplane bases and barracks, with an occasional chip-shop, but much of it imitates their own neighbourhood. No libraries or public lavatories have yet appeared but perhaps these are not usually found in a new country. They have not yet reached the cinema age, in that although they attend frequently this amusement has not become a drug to which they are addicted, so cinemas do not abound in the land. At the moment we have opportunities for unlimited expansion, although patrols from various communities have clashed, and frontiers have appeared in places. Much of the country is still undeveloped and there is no great incentive to occupy other people's territory. In the face of aggression alliances spring up, and wars would be frequent if we, as a deus ex machina, did not forbid them except where some really good reason can be found. It might be argued that this is an opportunity to teach that war is never justified, but this is primarily an experiment, and not education. We are waiting to see what will happen when expansion leads to overcrowding. Will they plan, or will they fight? Experience suggests the latter, but if they do, will the majority realise that this is unfair to many? Unfortunately jungle law is so ingrained in them that it is accepted as right for the strongest to enjoy the fruits of the weakest's labours. Group passions are seen in these boys without the trappings of adult ethics, and like the geneticists' fruit flies, they show years of evolution in a few months. Perhaps this is a way to solve the world's problems, by setting up prototypes in miniature.

* * *

If these cures for a cold, for rheumatism and for constipation were not reproduced here they might be lost for ever, for they are taken from a book called *Edgiana: Being a Collection of Some of the Sayings of Edward Edge*, so scarce that E. V. Lucas said of it, "Money cannot buy this book which is as rare as an Elzevir and much more humanly interesting." (I should like to know how E. V. L. came by his copy; mine is a family treasure.) Edward Edge was the Dane's (Dean's) man of St. Patrick's Cathedral in Dublin, and keeper of the gate and handy man about the Deanery. He was a character, a gossip, a maker of quaint remarks and a great teller of yarns. Everybody knew him; particularly the Quality in and about Dublin that "does be rowlin' by in their carriages wid tundherin big horses"; though even they did not believe that he was descended from the landed gentry, as thus: "did ye ever hear tell of Edgware Road in or about the city o' London? Well the Edges owned that and bedambut I'm thinkin' the weighty part o' the county o' Middlesex." Bedambut was one of his favourite expletives, one gathers

from the collection, which was made by the member of the Dean's family most favoured by Edge and the most frequently chosen recipient of obiter dicta, complaints and recollections. Edgiana was published, of all places in the world (as Edge would have said, "for why"?) in Alassio.

Here then is your cure for a cold. "If it was a thing ye had a heavy surfeit o' cowld, faith there's nothin' better ye could do only take an' ate a rale terrible ould salty book haird'n (buck herring) that 'id give ye the divil's drooth (thirst) an' then nothin' 'id satisfy ye but you should swally two or three bookets o' cowld spring wather, and agin yid be in bed be the tundherin Mack, the lather o' pesperation yid be in id sweep the cowld to blazes out o' your body"! No less effective was his cure for rheumatism: "heltake the docthor in Ireland that 'id cure the rheumatism agin me. Sure it's nothin' in the world only the best whisky mixed with a little brimstone: Ye take 3 croppers of it every day for 3 weeks, and the force of the alcordn (alcohol) drives the sulphur all through yer body and *tears* the rheumatism out." For constipation, said Edge, "I'll tell ye the greatest cure alive, if it was a thing ye were tibby (to be) bound *in* the body. Yid take and dhrink may be it id be the divil less than from three to four pints o' po-ertther wid a great big loomp of butther on top of each pint: well yid fire that down yer neck; and then yid get up on an ould kyar, and mindja the road should be rale joulty, an' yid give th' ould horse a couple o' leadthers o' the wattle and make him gallop as hard as ever he could, an (be the good man!) it 'id give ye the divil's fine rallyin' and next mornin' yid be as clane as a whistle. Bloog an' ounds but there's nothin' ayqual to it!!"

* * *

The travellers' tale that they are phosphorescent in the dark is both false and malicious. In fact, when you first join their Mess, psychiatrists look at first sight just like ordinary people. Therein lies your great danger. Many an unsuspecting lad has fallen into that trap and will carry invisible scars to his grave. Even their patients, they admit—nay, some of them boast—are never the same again after their successful treatment. Mind you, in the Mess they don't buzz round newcomers salivating like a covey of orthopædic surgeons at a nudist colony. No, far more subtly and disarmingly they wait for you to make the first move. And on your overtures may depend your whole future sanity. You see, they've got to fit you into one or other of their recognised categories, and they mustn't use force. That is one of the rules of their game. The obvious rejoinder (I see now) is to keep your mouth firmly shut. Don't be tempted to come out with something snappy about the weather, for one thing leads to another. Concentrate on ingratiating smiles, conciliatory gestures and being ready with the cigarette-lighter. Thus you may be able to slip quietly into the background and come to be regarded as an inoffensive piece of Mess furniture. I see now where I made my mistake. I was too pleomorphic. To one (in a fight for the fish-paste) I was a trifle aggressive, to another completely imbecile, a third threw me into a state of anxiety (with depressive features), from a fourth I could not conceal my hysteria, and I'm sure a fifth considered me obsessional from the way I mopped the beer off my trousers. I asked one of the bigger ones (for they are of all sizes) what their technical expression was for a chap—a purely hypothetical chap, of course—who reacted thus differently to different people. Without an instant's hesitation he replied, "Definitely immature, regressive and narcissistic." I hope he didn't notice my sudden pallor, but I bet he did. If so, that makes six. I suppose my idea roughly was not to put all my eggs into the same basket; but it was a rotten idea and I don't advise you to act on it should you ever get shipwrecked with a rubber (or is it a chunter?) of Trick Cyclists. You will find when you run unavoidably into the whole bunch—as one does in a Mess (or on a desert island)—that your reactions get like those of the chameleon on a plaid rug, and you badly Want to Leave the Room. (Infantile again, hey?) There only remains, and I hope it's not too late, to establish yourself as a Psychopathic Personality (with Anti-Social Tendencies). You lose caste terribly thereby (which is an awful pity, because their runcibility in the deepest and truest sense of the word simply couldn't be higher); but the chances are that it will work you your ticket.

Parliament

ON THE FLOOR OF THE HOUSE

MEDICUS MP

MEMBERS of Parliament are to visit the Italian theatre of war, and there is a rumour that holders of E petrol coupons may have preference in getting new tyres for their cars and possibly even some additional petrol. Signs of spring! As soon as any normal peace-time travel begins here or overseas the process will continue and extend. But in London, and what is officially described as South-east England, the immediate prospects for winter are not too good. The repair of war-damage in the London region—roughly the same as the Metropolitan Police District—will cost £30–£35 million, and cannot possibly be done by Christmas under present arrangements.

The debate last Friday adumbrated the complex problems which face Government and local authorities. There were warnings of the possible increase of tuberculosis and other diseases. One member asked whether the Minister of Health was keeping a watch for the beginning of any epidemic such as spread across the world after the first world war. The food situation in this country is better than it was then, but the housing situation is worse. There is overcrowding, sometimes gross overcrowding, in London and the blitzed towns. And there is overcrowding in other parts of the country for other reasons. To repair blitzed dwellings is only the first stage in providing adequate housing for our population. There are all the arrears of war-time neglect of routine repair and maintenance to make up. And there is all the new building which will be needed "when the men come home." Housing alone will provide work for all in the building trade for a long time ahead.

In the meantime London and the South-eastern counties have been given absolute priority for repairs over the rest of the country, and 140,000 workers are already employed, but there are difficulties not only of labour but also of supply and distribution.

The Moscow visit is to be followed, it is hoped, by a meeting of Marshal Stalin, the President of the United States, when elected, and Mr. Churchill "before Christmas," if possible. But although the time is full of hope yet the period of the war before us will be hard and grim. The Goebbels broadcast showed how grim it is for the Germans, and desperate men will fight hard. Even if dozens of MPs fly like doves to the reconquered lands of Europe from this Ark of Britain, the winter struggle has still got to be endured.

FROM THE PRESS GALLERY

Hearing-aids

IN the House of Lords on Oct. 24 the Duke of MONTROSE asked what progress had been made by the Government in their negotiations with the hearing-aid manufacturers to produce national standardised hearing-aids; and whether the aids would be sold at a price within the means of deafened ex-Servicemen, or whether a grant would be allowed towards the price. Lord TEMPLEMORE in reply said the Medical Research Council had appointed a committee to investigate the electro-acoustic problems connected with the manufacture of hearing-aids. It was hoped that this committee would be able to recommend specifications for standard models to be sold at a reasonable price. The committee had already held several meetings and a number of physicists had been appointed to collaborate with otologists and physiologists in experimental work on their behalf (see *Lancet*, 1944, i, 574). Discussions between Government departments and the hearing-aid manufacturers had been informal. He understood that the Association of Hearing-Aid Manufacturers had prepared a tentative specification for a standard aid and had submitted some information about it to the committee. It was too early yet to give any indication of the price at which any standard aid would be sold, but hearing-aids were supplied free of charge to ex-Servicemen suffering from deafness due to war service. The Duke of MONTROSE said he believed American manufacturers had a standard aid costing $40 of which they had manufactured about 100,000.

QUESTION TIME

Scientific Advisers

Mr. B. BRACKEN informed Sir E. GRAHAM-LITTLE that the BBC has no scientific advisory committee. It seeks advice on scientific subjects from the Royal Society, the British Association, the Medical Research Council and other authoritative sources, according to need. This procedure will be reviewed in due course in relation to the BBC's post-war arrangements for advisory committees generally.

Replying to a question, Mr. R. K. LAW stated that the British Council have established in Chungking a cultural and scientific office under the direction of Mr. Joseph Needham, FRS, to promote contacts with China. He added that though no scientific attachés have yet been appointed to HM missions in foreign countries a British scientific mission also existed in Washington for the purpose of exchanging scientific information with the United States Government. The possibility of making similar arrangements elsewhere was under consideration.

Research in a National Health Service

The encouragement and assistance of research will continue to be primarily the function of the Medical Research Council which was set up by Royal Charter for the purpose. It is the Government's intention that research and opportunities for research should be continually developed with the help of the council. (Mr. H. WILLINK replying to Mr. E. W. SALT.)

Old-Age Pensioners and Artificial Limbs

Mr. R. DUCKWORTH asked the Minister whether he was aware of the difficulty which faced civilian men and women who were old-age pensioners in obtaining needed replacements of artificial limbs; and what assistance his Ministry was prepared to give to these people.—Mr. WILLINK replied: I am aware that some difficulty may be experienced in obtaining artificial limbs owing to the shortage of labour and supplies. I understand that so far as possible preference is given to war casualties and to persons whose capacity for employment is adversely affected by the absence of an artificial limb. So far as the question is one of cost, the provision of an artificial limb for a pensioner in need is a matter for the decision of the public-assistance authority and any such person should make application to the appropriate officer of the authority.

Residential Nurseries

Sir HAROLD WEBBE asked the Minister, what was the total number of children in residential nurseries maintained or aided out of public funds.—Mr. WILLINK replied: There are about 3000 children in residential nurseries maintained or aided by public-assistance authorities and a small additional number in nurseries maintained by maternity and child welfare authorities. In addition there are 407 residential nurseries with approximately 13,000 places established under the Government evacuation scheme. Some 4000 staff are engaged in this latter service, and the average weekly cost per place varies from 25–40*s*.

ADDITIONAL HEALTH INSURANCE BENEFITS.—Mr. WILLINK confirmed that persons insured under the existing National Health Insurance Act, who were at present entitled to receive dental treatment and other additional benefits out of the valuation surpluses in their approved friendly societies, would continue to receive the same until the new scheme became operative.

CHILDREN'S HOMES AND INSTITUTIONS.—Mr. WILLINK said that 581 hostels of varying types for children of school-age had been established under the Government evacuation scheme. The number of places in the hostels was approximately 14,300.

TYPHUS MEDAL.—The medal of the USA Typhus Commission has been awarded to Colonel J. S. K. Boyd for his coöperation in the distribution of typhus vaccine through the Middle East, to Brigadier G. B. Parkinson and Brigadier R. W. Galloway for their help in preventing the spread of typhus in Southern Italy, and to Dr. Abdel Wahed El Wakil, Egyptian minister of health.

Letters to the Editor

CHRONIC NECROBIOTIC SUBCUTANEOUS NODULES OF THE RHEUMATOID ARTHRITIS TYPE

SIR,—Since Collins (1937) and others have conclusively shown that the characteristic subcutaneous nodules of rheumatoid arthritis consist of foci of fibrinoid degeneration and necrosis, surrounded by a border of tissue reaction, notably with a palisade-like radiate arrangement of fibroblasts, it has become evident that not all subcutaneous nodules in cases of rheumatoid arthritis are microscopically of exactly the same type (F. P. Weber, *Brit. J. Derm.* 1943, **55**, 1, and *Ann. Rheum. Dis.* 1944, **4**, 3). To facilitate further work on the subject (biopsy results especially) I would suggest that the nodules of the now well-known type, as described by Collins and others, should be termed "chronic necrobiotic subcutaneous nodules of the rheumatoid arthritis type," this term to include indurations of similar structure in the walls of bursæ, in tendon-sheaths, and attached to fasciæ, ligaments, or periosteum, or, in a very few cases, apparently arising from or involving the deep cutis. Some of the exceptional nodules which I have in mind may apparently differ altogether in histological structure, whilst certain others may differ only by deposition in the nodule of calcareous or lipoid (cholesterol) or other material. I cannot help thinking that further biopsy examinations will furnish us with data of clinical, and especially diagnostic, value.

Harley Street, W1. F. PARKES WEBER.

SPREAD OF SCABIES

SIR,—Dr. Fleetwood's letter of Oct. 14 raises a matter which needs more clinical attention. In factories I have occasionally seen little outbreaks of scabies among young girls working in one particular office or canteen, but never an outbreak among young boys in similar circumstances. These young girls, coming from different homes, probably contract their disease through their affectionate habit of walking about with their arms round one another's necks—a habit which boys would scorn. However, there is no doubt that sleeping with an affected person is still the commonest cause. From experience in a clinic for venereal diseases, and occasional observation on men and women whom I knew were associating together, I should say that sexually contracted scabies commences often round the genitals and buttocks, the rest of the body being free for a time. Some months ago I saw a man with scabies of the penis, abdomen and upper thighs (he had a typical lesion on the dorsum of the penis), while the woman with whom he had recently begun to carry on a clandestine affair during the night-shift in the factory had the ordinary distribution. This "midriff" distribution may be common in the type of person, often seen in VD clinics, who indulges in hole-and-corner sexuality. I myself have never seen scabies proved to be contracted through paper or any other material handled while at work in factories and should regard such infection as unlikely.

Oxford. G. P. B. WHITWELL, Works Medical Officer.

CRUDE PENICILLIN

SIR,—With the assistance of clinicians at several hospitals we have been testing a penicillin filtrate on a fairly extensive scale during the last four months. The filtrate has been prepared under our guidance and direction by Messrs. Roche Products Ltd. Unfortunately "enemy action" has destroyed a large proportion of our records and we are unable to publish the detailed paper we intended to prepare. The recent greatly increased availability of pure penicillin, however, renders such a report somewhat less useful. We would therefore like to summarise briefly the results still available and then to indicate the lines along which crude penicillin products appear to us to be developing a definite place in clinical work.

First, both Mr. D. F. Freebody at Putney Hospital and Dr. Walsh at King George Hospital, Ilford, report excellent results in hand infections. The former treated a severe tendon-sheath infection by the instillation of filtrate by catheter. He obtained healing in a few days with full functional recovery. The latter had a similar

good result with a palmar infection with several sinuses. Most striking, however, are the results in fresh burns. As in cases already reported in THE LANCET by one of us, all burns of first and second degree treated with crude penicillin from the outset have healed without any sepsis in 7–10 days. Third-degree burns also heal rapidly and only occasionally do small areas become septic; Dr. Walsh reports 3 such cases. A third condition which yields rapidly to crude penicillin is acute staphylococcal or streptococcal skin infection. All these results have been obtained with filtrate of between 1·6 and 10 Oxford units per c.cm.

In future pure penicillin solutions will be available for injection into sinuses and for treating deep wound spaces, but there seems to be a large field left for more or less crude—and therefore cheap and plentiful—penicillin dressings for surface conditions, especially in general practice. We would suggest that the following types of cases remain:

1. Fresh burns of the first three degrees.
2. Abrasions and surface wounds.
3. Acute skin infections.
4. Dirty chronic ulcers preparatory to radical surgical treatment.

We are now experimenting with a dried dressing impregnated with crude penicillin of considerably higher strength. Messrs. Roche Products are preparing this for us, sterilely packed. Under suitable conditions these dressings seem to have a considerable stability. The Penicillin Production Committee has lately interested itself in our development and we hope that both the committee and ourselves will soon have encouraging reports to publish. If these hopes are realised penicillin treatment of a wide range of cases will become available at a very reasonable production cost.

A. J. HOBSON.
Harley Street, W1. L. D. GALLOWAY.

THREADWORM INFECTIONS

SIR,—In Colonel Clayton Lane's article of Oct. 14 I note that only two drugs are mentioned—gentian-violet and phenothiazine. Moreover the article concludes with the remark: "But no drug is yet known that is deadly to the worm yet less risky to man than is the infection. It needs finding."

Another substance which is also a dye and has a chemical similarity to phenothiazine is methylene-blue. Incidentally, this substance is described in the BPC as being destructive to parasitic worms in vitro, but I have found no other reference to its use in this respect. I recently gave gr. 3 t.d.s. for a week to a nursing mother because phenothiazine would have been too dangerous, and no toxic effects were produced either in the mother or in the baby. Although the infection was not severe, this patient had had repeated attacks over several years, in spite of treatment with phenothiazine. The treatment she received last April, together with subsequent prophylactic courses, appears to have rendered her free from her complaint. The patient herself had suggested the methylene-blue as the result of a letter from her father who "for years was tortured with the little brutes and tried everything." He eventually got rid of them after a doctor had treated him with methylene-blue for albuminuria. I have since treated another case which was riddled with them and there has been no recurrence, and I shall continue to use this safe and effective remedy.

Lancaster. R. PAKENHAM-WALSH.

TREATMENT OF CEREBROSPINAL FEVER

SIR,—Your leader of Oct. 21 suggests that the treatment of cerebrospinal fever by intrathecal injection of serum should now be abandoned. I can think of many severe cases which I treated, before the discovery of sulphonamides, by repeated lumbar puncture and intrathecal administration of serum, whose recovery I attributed to this method. The sulphonamides inhibit the growth of germs but do not act on their toxins, against which antitoxic serum still seems to be the best means of defence. I suggest that, pending further evidence, the use of serum in cerebrospinal fever should be continued.

Croydon Borough Hospital. J. TODESCO.

EVALUATION OF NUTRITIONAL STATE OF CHILDREN

SIR,—Dr. Kornfeld and Professor Nobel have rendered a service in directing attention once again to the use of anthropometric data in assessing the need for food relief after the war. If relief is to be given according to need, answers will be required, for each of the populations receiving it, to the questions "what is the nutritional status now," and, from time to time, "is it getting better or worse?" Kornfeld and Nobel point out that comparisons should, if possible, be made between both different regional and social groups and between individual children within those groups. They suggest that for regional and social groups the answer to the first question would be given by comparing the distributions of the heights and weights of the "relief" and of "normal" populations within the chart they publish. They do not say, however, what the normal distribution is. Presumably, the answer to the second question would be given by the changes from time to time in the distribution of the physical measurements within the chart of the various relief populations. It is not clear what advantage the chart has over average heights and weights according to age for a quick review of the anthropometric status of such regional or economic groups. Nor is it clear what advantage the chart has over similar averages, together with weight increments according to age and attained weight, for assessing changes in status from time to time. Such averages have the advantage that they can be used for simple and direct comparison with corresponding data, where they exist, for similar groups before the war.

The use of anthropometric data for differentiating between well and badly nourished individual children is full of snags. A child lighter or shorter than his fellows need not be undernourished, and a child undernourished need not be lighter or shorter than his fellows. While it is recognised that weight change is a sensitive index of changes in environmental conditions, no technique has yet been evolved for using attained heights and weights to select the undernourished. In fact, no technique based on anthropometric data of any kind has yet been found reliable after thorough testing. The difficulty in the use of individual heights and weights for that purpose can be illustrated by considering how two children of different physique would be classified on the proposed chart. A naturally light child would be selected as underweight and referred for clinical examination, whereas a naturally heavy child who was ill-nourished might still be overweight and thus escape detection. Franzen, McCloy and Dearborn and Rothney, as well as other workers in the USA, have recognised the anomalies which arise in selecting according to attained height and weight and have proposed "static" formulæ of a more complicated kind for detection of the undernourished. It is doubtful if the method proposed by Kornfeld and Nobel, which is based on the relationship of individual to average heights and weights, can satisfactorily be used for differentiating between well and badly nourished children.

London, SW1. E. R. BRANSBY.

CONGENITAL ABSENCE OF SWEAT GLANDS

SIR,—I was interested to read in your issue of Oct. 21 a description of two cases of hereditary ectodermal dysplasia. About a fortnight ago I was visited by a soldier whose discharge from the Army was under consideration on account of this disability. He came to see me because I had had him under my care at a school clinic in Glasgow from the age of about ten years until he left school. His appearance when I first saw him coincided with the description in an article in THE LANCET by a professor of medicine in Cape Town, I think. The diagnosis was made on sight because of the remarkable resemblance to some photographs of children published with the article. The general characteristics at that time were as follows.

Face and scalp.—The face had a curious old-man look, there being a discrepancy in size between the upper and lower part of the face. The cheeks were sunken, the chin pointed and the nose overhanging the mouth because of the lack of normal dentition. The bridge of the nose was sunken and the

hair on the scalp was very fair and definitely sparse on the vertex.

The *teeth* were characteristic. There were four canines, long and slender, resembling reptilian teeth. Three malformed molars were present—two on one lower jaw and one on the other. The alveolar margin was knife-edge in appearance. X rays showed some other unerupted teeth.

The *skin* was smooth and fine, but with thickening on palms and soles.

Symptoms.—He was most uncomfortable in hot weather, suffering from exhaustion and occasional fainting turns. He tried to overcome this discomfort by splashing cold water over his clothes. There was some anæmia.

He has now had artificial dentures for two years and apparently 14 teeth in all erupted. X rays now show no evidence of any unerupted teeth. The lips are prominent, probably because they have been used for grasping food. The hair on the scalp is sparse with practically none on the vertex. Pubic and axillary hair is present but very sparse, short and fine; there is no hair elsewhere on the body. He still complains of discomfort in warm weather, which is to some extent overcome by soaking his socks in cold water and splashing his hands frequently with water. He feels that as he has grown older this discomfort in warm weather has become less pronounced. On effort he rapidly becomes exhausted but seems to recover reasonably quickly with rest. There is no history of any fainting during training in the Army, though he found many of his duties very exhausting. He says that he never at any time has been aware of perspiration on his body. There is a soft systolic murmur at the apex, but this is apparently not significant. He has a chronic pharyngitis, but no nasal symptoms. The skin of palms and soles is parchment like and fissured. On the whole his symptoms now are less pronounced than they were in his school days.

Glasgow. J. MILLER YOUNG.

RESERVATION OF MEDICAL STUDENTS

SIR,—The letter of Sir E. Graham-Little in your issue of Oct. 21 is timely. There is little reason for a man being judged on the result of one examination, and none for labelling him an unsatisfactory student on that one result. There is another point. Are these young men who have been called from their studies to have any chance of resuming them at a reasonably early date after war ends? A ruling on that would be welcome. As I am the parent of one of these lads I shall merely sign myself,

AGRESTIS.

LANCECTOMY

SIR,—I cannot agree with your correspondent, Mr. E. G. Sita, on the technique of this important operation. I have essayed his method, but my cases suffered—too severely for my taste—from resultant trauma to the underlying non-expendable tissue. I commend to surgeons the following manipulative measure which obviates the use of any instrument:—

Grasp the cylinder in the manner of one elevating the offertory—i.e., in both hands, palms up, with the thumbs laid just clear of the suture line, in such a way that pressure by the flexor surface of the pollicular distal phalanges is exerted on that layer of the superficies which passes underneath at the gingival (or gummy) margin. Press boldly with the thumbs (uttering any suitable incantation), and the entire structure will be found to burst open along the suture line. For complete delivery it may be necessary to move the thumbs and repeat the pressure at one or two more levels, but the total operation is completed in an average of 2·75 secs.

Any distortion of shape due to pressure is purely transitory; the medulla emerges unscathed, while the cortex also is retained intact, for such valuable purposes as pipe-lighting, shopping lists, or re-issue as wrapper.

Aldbourne, Wilts. K. FORSAITH LANDER.

*** This correspondence is now closed.—ED. L.

TUBERCULOSIS ASSOCIATION.—At 3.45 PM on NOV. 17 at Manson House, 26, Portland Place, London, W1, Dr. F. R. G. Heaf, Dr. P. W. Edwards, Dr. W. L. Yell and Dr. J. H. Crawford will open a discussion on the place of work as a therapeutic measure in tuberculosis.

Obituary

ERNEST WILLIAM HEY GROVES

M D, M S LOND., HON. D SC BRIST., LL D BELF., F R C S, F R A C S

ALL over the world the name of Hey Groves is associated with orthopædic surgery. But he was a general surgeon before he was an orthopædist, and a general practitioner before he was a surgeon. Some would say that this was the ideal training for his specialty, and it certainly gave him the catholic outlook he showed as editor of the *British Journal of Surgery* for 28 years.

British Journal of Surgery, 1941

He was the son of a civil engineer, Edward Kennaway Groves, and was born in India. From school at Redland Hill House, Bristol, he went to Bart's, and having taken his B Sc Lond. he demonstrated biology to his fellow students for three years under T. W. Shore—a stimulating experience that left its mark on his career. Qualifying in 1895, he became obstetric house-physician under Sir Francis Champneys, and after a period at Tübingen he settled in practice in one of the outer Bristol suburbs. But general practice did not satisfy him; he was soon haunting the hospitals to see what he could learn of surgery. A colleague who met him first in 1903 recalls that "his mind was infinitely inquiring; he would take nothing for granted, and he would see everything for himself. He would not hesitate to express an opinion of his own or disagree with that of another, senior though he might be. At this time he was beginning to embark on a surgical career on his own account, and he made a start by taking into his own house, to be nursed by his wife who had been trained at Bart's, any case which his practice provided. He used to say that the first gastro-enterostomy he ever saw was one performed by himself." In 1905, having taken his FRCS and MS (with gold medal), he was elected to the staff of the Bristol General Hospital, and also became senior demonstrator in anatomy at Bristol University. At the hospital the few beds then allotted to him did not provide sufficient outlet for his energies—a situation which he met by interpreting the scope of outpatient operative surgery much more liberally than is usual.

At first Hey Groves wrote, as he worked, on all sorts of surgical subjects, but before long his mechanical turn of mind led him to concentrate on bone and joint cases, in which he could employ his talents as inventor and carpenter. His splints and devices were legion; indeed at one time examination candidates, asked the name of some appliance strange to them, felt fairly safe in attributing it to him. At the same time he was exploring new ground in bone surgery. In particular he worked at improving the operative treatment of fractures of the neck of the femur. Before the days of the Smith-Peterson and similar pins he spent much time and thought in fashioning pins from beef-bone and from the horn of stag and rhinoceros. More than once he attempted even the transplantation of a complete knee-joint from the dead to the living; though here success eluded him. Already in 1913 he was suggesting, as an alternative to plating of fractures, the use of steel pins passed through the fragments and held together by external splints.

In the war of 1914–18 Hey Groves extended his reputation. In 1915 he produced a primer on Gunshot Injuries of Bones which, inter alia, described the use of his transfixion pins in such cases. Often, however, he found himself up against the powers that were; for he displayed a lively contempt for anything that seemed to him red tape. As a junior officer he had no hesitation in visiting Command headquarters and expressing his opinions to those in charge; and some said that he was

sent to Egypt, not France, because it was farther away. (It is related that on setting out for Alexandria with other RAMC officers, he found that none could go aboard ship unless properly dressed in spurs; whereupon he managed to acquire a rusty pair at a marine store, and having himself embarked, tossed them ashore repeatedly for the use of each of his colleagues in turn.) After a year in Egypt he was home again, and soon had surgical charge of a military orthopædic centre in Bristol, later becoming surgical director of the Ministry of Pensions Hospital, Bath. In 1920 he contributed to our columns a valuable account of bone-grafting.

From a lectureship Hey Groves was promoted to the Bristol chair of surgery in 1922. Though honoured and liked in his own city, he was also now becoming a national and international figure in surgery. At the Royal College of Surgeons he remained a member of council for no less than 23 years, serving as vice-president (1928–29), examiner (1928–34), Bradshaw lecturer (1926), Hunterian orator (1930) and first Moynihan lecturer (1940). In 1928–29 he was president of the British Orthopædic Association, and in the following year president of the Association of Surgeons. His *Synopsis of Surgery* (first published in 1908), his *Modern Methods of Treating Fractures*, his *Surgical Operations*, and his textbooks for nurses brought him as teacher before a very large audience, and his indefatigable work as editor—or, strictly speaking, "editorial secretary"—of the admirable *British Journal of Surgery* from 1913 to 1941, placed the whole profession in his debt. Many lectures and shorter papers appeared in *The Lancet*, including a study of "Our Hospital System" in 1928 which recommended state aid without state control. In personal contacts, though strong-minded, he was also good-tempered, and associates speak of his "magnanimous spirit."

Professor Hey Groves became emeritus professor on his retirement from the chair of surgery, and received honorary degrees from Bristol and Belfast, as well as the fellowship of the Royal Australasian College of Surgeons. He died on Oct. 22, at Clifton, at the age of 72, after a long illness.

Appointments

BROOKES, C. J., MB ST. AND., FRCSE: examining factory surgeon for Paddington.
CUNNINGHAM, NORMAN, MB CAMB.: examining factory surgeon for Shelf, Yorks.

Births, Marriages and Deaths

BIRTHS

BARRY.—On Oct. 23, at Wellington, Somerset, wife of Captain C. T. Barry, RAMC—a son.
BENNETT.—On Oct. 25, at Wroxham, Norwich, the wife of Dr. Ronald Bennett—a daughter.
DUPRE.—On Oct. 24, at Hemel Hempstead, Herts, the wife of Dr. Peter Dupré—a son.
GREEVES.—On Oct. 25, at Wellington, Somerset, the wife of Major P. R. Greeves, RAMC—a daughter.
PAUL.—On Oct. 26, at Liverpool, the wife of Major Richard Paul, RAMC—a son.
SALEM.—On Oct. 21, the wife of Lieutenant J. S. Salem, RAMC, of Kenton, Middlesex—a son.

MARRIAGES

GUTHRIE—BOWMAN.—On Oct. 26, at Bussage, Gloucestershire, James Guthrie, lieut.-colonel IMS., to Rosalie Joan Bowman.
STEWART—TYLER.—On Oct. 23, at Swindon, Harold Constantine Stewart, lieutenant RAMC, to Phyllis Mary Tyler.
STONEHAM—WALKER.—On Oct. 14, in London, Frederick James Russell Stoneham, MRCS, squadron-leader RAFVR, to Pauline Elaine Walker, section officer WAAF.
THOMPSON—WHITE.—On Oct. 21, at Bromley, John Herbert Thompson, MRCS, to Eleanor Ada White, MRCS.
WRIGHT—COHN.—On May 30, at Chungking, China, Philip Rickard Turton Wright, BRC, to Adele B. Cohn, MD, of Rochester, NY.

DEATHS

AYLEN.—On Oct. 28, at Southwold, John Aylen, MRCS, aged 64.
JAMES.—On Oct. 27, at Reigate, Charles Henry James, CIE, FRCS, lieut.-colonel IMS retd., aged 81.
JOHNSON.—On Oct. 26, Raymond Johnson, OBE, MB LOND., FRCS.
KEMP.—On Oct. 24, at Worksop, Notts, George Lajus Kemp, MD LOND.
LAUCHLAN.—On Oct. 26, at Haslemere, Henry David Lauchlan, LRCPE, of Ewell, aged 88.
THOMAS.—On Sept. 4, George Trevor Harley Thomas, MRCS, FRCSE, major RAMC retd., aged 84.

On Active Service

CASUALTIES

MISSING

Captain C. E. C. WELLS, MB LOND., RAMC

WOUNDED

Captain P. N. SWIFT, MRCS, IMS

AWARDS

DSO

Captain V. J. DOWNIE, MC, MB BIRM., RAMC
Major G. McC. BASTEDO, RCAMC
Major C. E. CORRIGAN, RCAMC

MC

Major A. C. S. HOBSON, MRCS, RAMC
Captain LEONARD CROME, LRCPE, RAMC
Captain J. A. PETRIE, MB ST. AND., RAMC
Captain A. I. PIRIE, MB EDIN., RAMC
Captain M. K. RAY, IAMC
Lieutenant D. K. RAMADWAR, IAMC

MEMOIR

Captain NEIL WHITLEY was born at Barton Pines, Paignton, in 1918, the youngest son of Mr. and Mrs. William Whitley of Welstor, Ashburton. He was educated at Bromsgrove School, Worcestershire, and Clare College, Cambridge, where he took his BA in 1942, and in the same year he obtained the Conjoint qualification from the London Hospital. On first joining the RAMC he was attached to an anti-tank regiment and later trained with a parachute regiment. He landed in Normandy on D-day with an airborne division and was wounded by mortar fire while attending to a German prisoner. He was brought back to a hospital in this country, but died ten weeks later on Aug. 26 and was buried at Buckland-in-the-Moor. Captain Whitley married in 1941 Miss Eileen Zender Browne, third daughter of Prof. T. J. Browne of Bradenton, Florida, and he leaves her with a three-month-old son.

Cooper

"When I knew Whitley first as a clinical clerk," G. R. writes, "his cheerful, enthusiastic personality was arresting and his keen interest in his work made it easy to predict that he would become an excellent medical officer. And so he proved to be with the airborne division, and courageous as well. When I next saw him in a coastal hospital, seriously wounded, paralysed and gravely ill, he was still himself, his smile as vivid as ever and his interest in others alive. He was moved to a special centre for spinal injuries where with skilled treatment he rapidly improved for a time; but the sepsis from his wound had extended too deeply and caused fatal damage. It is a sad waste of a young life and of a promising family doctor of the best kind."

INFECTIOUS DISEASE IN ENGLAND AND WALES

WEEK ENDED OCT. 21

Notifications.—The following cases of infectious disease were notified during the week: smallpox, 0; scarlet fever, 2176; whooping-cough, 970; diphtheria, 580; paratyphoid, 6; typhoid, 9; measles (excluding rubella), 3779; pneumonia (primary or influenzal), 640; puerperal pyrexia, 157; cerebrospinal fever, 36; poliomyelitis, 14; polio-encephalitis, 0; encephalitis lethargica, 1; dysentery, 391; ophthalmia neonatorum, 76. No case of cholera, plague or typhus fever was notified during the week.

The number of civilian and service sick in the Infectious Hospitals of the London County Council on Oct. 18 was 717. During the previous week the following cases were admitted: scarlet fever, 41; diphtheria, 26; measles, 13; whooping-cough, 18.

Deaths.—In 126 great towns there were no deaths from enteric fever, 2 (0) from measles, 2 (0) from scarlet fever, 6 (0) from whooping-cough, 7 (0) from diphtheria, 50 (3) from diarrhœa and enteritis under two years, and 25 (4) from influenza. The figures in parentheses are those for London itself.

Manchester reported 5 deaths from diarrhœa.

The number of stillbirths notified during the week was 202 (corresponding to a rate of 30 per thousand total births), including 17 in London.

Notes and News

CINEMICROGRAPHY

Two papers on the recording of movement taking place under the microscope were read at the meeting of the Association for Scientific Photography at Caxton Hall on Oct. 14. H. Emmett, FRPS, described the set-up used in one of the ICI research laboratories, consisting of a petrological microscope, above which is supported the ciné camera without its lens, while the microscope is also used without the usual eyepiece, but it must have a viewing attachment to enable the image to be kept under observation while being filmed. Focus on the film is ensured by inserting a piece of ground glass in the gate and balancing this image with one seen in the viewing eyepiece; careful centring of the light is obviously of first importance. A 9·5 mm. camera was used connected through a belt drive to an electrically controlled gramophone motor which enables exposures to be taken at known intervals and projected at the normal speed of 16 frames per second, when slow changes can be clearly seen. This set-up was used in recording crystal growth. Of two films projected by Mr. Emmett the first showed various points of interest in the study of crystals, such as the changes in crystalline form induced by impurities, and the allotropic change in acicular crystals of ammonium nitrate which can take place on lowering the temperature. The second film dealt with the concentration gradient around a crystal during growth.

The second paper, by R. McV. Weston, FRMS, on cinemicrography in biological research, described a more elaborate apparatus for higher-power micrography, using a 16 mm. Ciné-Kodak Special camera to record the images. Owing to the employment of living specimens, a rotating sector shutter was used to prevent overheating and the whole of the microscope stage was enclosed in an incubator, the necessary controls being outside. The heating elements were two 30-watt carbon filament lamps shielded to prevent direct rays reaching the object and a chloroform-mercury thermostat next to it. As in the first apparatus the light was provided by a 100 c.p. 'Pointolite' lamp. Mr. Weston projected a film showing the movement of the leucocytes among the red corpuscles of the blood; higher magnifications showed the triple nuclei and the movement of the granules inside the cells.

RETURN OF THE CHILDREN

THE Government have decided that certain districts on the coast and elsewhere shall cease to be evacuation areas. The position of children belonging to these districts who are now accommodated in residential nurseries and small nursery units in reception areas is therefore to be considered with a view to sending them home. As the Ministry of Health points out (circular 149/44), the best place for a healthy child under 5 is with his mother; even if he spends part of the day in a nursery school or war-time nursery, he should be with his mother for the rest of it. In every residential nursery, however, there will very likely be some children whose parents cannot resume care of them immediately. A health visitor or other social worker is to visit the parents to find out whether the child can be received back, and to discuss difficulties and help in making any arrangements that will enable the parents to take the child—finding accommodation for homeless families, arranging for a local nursery to take the child during the mother's working hours, and procuring a cot and bedding if these are needed.

Children who cannot go home because their mothers are dead or ill, and whose fathers are in the Services or not living at home, will be transferred to existing residential nurseries until permanent plans can be made for them. Parents able and willing to take a child back at once will be given a free travel warrant to fetch him. Children whose parents cannot fetch them may be taken home, or brought in a group to their home neighbourhood, to be collected by parents from some central point. The Ministry recommends that follow-up visits should be made to the children in their homes, to see how they are settling down.

British Medical Students Association

The annual general meeting will be held at BMA House, Tavistock Square, London, WC1, on Nov. 10, 11 and 12. The Minister of Health will attend the session beginning at 4.30 PM on Friday the 10th, when a member will present him with the results of the questionnaire to students on a national health service.

Royal College of Physicians of London

At a comitia held on Oct. 26, with Lord Moran, the president in the chair, Air Vice-Marshal C. P. Symonds, Dr. T. L. Hardy and Dr. J. A. Charles were elected councillors. Sir Adolphe Abrahams was elected representative on the committee of management of the Conjoint Board, Sir Comyns Berkeley on the council of the Central Midwives Board, Sir Stanley Woodwark on the Central Council for District Nursing, and Dr. J. Hay on the court of governors of the University of Liverpool. Dr. H. E. Magee was appointed Milroy lecturer for 1946. The Jenks scholarship was awarded to P. H. Lovell, late of Epsom College.

The following were admitted to the membership:

*Yasin Abd el Ghaffar, MB CAIRO, J. N. Agate, MB CAMB., A. D. Barlow, MB CAMB., A. J. V. Cameron, MB GLASG., *T. A. W. Edwards, MB CAMB., squadron-leader RAF, *A. El Mofty, MD CAIRO, *M. N. Fahmy, MD CAIRO, E. A. Fairburn, MB LOND., *M. A. R. Fayez, MD CAIRO, J. L. Fluker, MB CAMB., J. H. Friend, MB LOND., flying-officer RAF, M. R. Geake, MB CAMB., J. G. Howlett, MD McGILL, wing-commander RCAF, *J. A. Inglis, MB SYDNEY, captain RAMC, R. W. Lass, LRCP, squadron-leader RAF, F. K. Lau, MB CAMB., J. M. Lipscomb, MB CAMB., *F. L. A. Lydon, MB NUI, major RAMC, R. I. McCallum, MB LOND., *D. R. Macdonald, MB EDIN., Georges Marcel, MD PARIS, R. J. G. Morrison, MD LOND., major RAMC, *A. H. Mousa, MD CAIRO, P. B. Newcomb, MB LOND., *Ali Omar, MB CAIRO, James Overton, MB LEEDS, *Youssef Rizkalla, MD CAIRO, Dorothy H. Robertson, MB LOND., John Reginald Trounce, MB LOND., lieutenant RAMC, *Hermon Whittaker, LRCP, and J. V. Wilson, MD BELF., major RAMC.

* Admitted in absentia.

Licences to practise were conferred upon the following 174 candidates (147 men and 27 women) who have passed the final examination of the Conjoint Board and have complied with the by-laws of the College:

Doreen M. Aaröe, E. W. R. Alderman, Philip Allebone, P. M. Anderson, J. D. Andrew, John Andrew, Joseph Armstrong, Roy Astley, F. J. Aumonier, A. D. Bangham, R. H. O. Bannerman, J. C. Barclay, M. A. Barker, Frank Batley, Katharine M. O. Beadon, M. F. Bethell, D. T. A. Brown, Arnold Bruce, Alice E. Buck, Joan Bullough, R. D. Calcott, G. R. H. Callejs, M. D. Caplan, H. S. Capoore, Dan Cappon, J. A. Carr, H. E. Claremont, C. B. Clarke, I. F. Collie, Pamela J. Coope, A. R. Corbett, J. H. Coulson, R. A. Cranna, G. E. Cree, Richard Creese, R. H. Cufforth, J. K. Datta, P. L. H. Davey, Edith M. Davies, Joan M. B. Davies, Rosemary Davies, A. M. Dawson, I. M. P. Dawson, S. J. Dickson, J. W. T. Dixon, M. H. N. Dixon, Aileen P. M. Dring, S. L. Duggal, Michael Duggan, J. S. Ebsworth, V. B. J. Edwards, M. A. Epstein, Samuel Epstein, D. M. L. Evans, B. L. Finzel, L. G. Fison, T. W. Forster, Maud M. Frankland, P. H. Friedlander, A. E. Gibbs, Muriel M. Gloster, J. S. R. Golding, G. E. L. Graham, J. C. Graham, Joyce F. Grant, B. A. J. C. Gregory, A. J. M. Griffiths, G. J. Grossmark, D. W. Hall, H. A. N. Hammersley, L. G. W. J. Hannah, R. M. Hardisty, R. O. F. Hardwick, L. I. Hatherley, Katharine P. Haworth, †Alison B. Hay-Bolton, F. G. J. Hayhoe, P. R. Headley, Josephine M. R. Heber, E. W. Heining, E. P. W. Helps, Adrian Hill, F. A. Holden, C. J. S. Holdsworth, R. G. Howell, Margaret E. Hughes, C. F. Hutton, D. G. James, N. H. James, Arthur Jones, S. K. Kalgutkar, J. G. Kendall, Ethel E. A. D. Knowles, Barbara Law, David Lawrence, B. C. Lee, R. E. D. Leigh, D. W. L. Leslie, Moses Levene, W. B. Lingard, G. H. Lloyd, E. S. Lower, John Meyrick, C. M. Monro, Rhiannon Morgan, P. D. Mort, J. P. D. Mounsey, B. G. P. Oakenfull, T. D. S. Oswald, K. G. Paddle, K. W. E. Paine, H. E. Parry, P. F. Pearson, B. H. Pentney, J. C. E. Peshall, R. G. Pitman, B. R. Pollard, G. W. Poole, Diana Powell-Cotton, J. P. Pracy, Robert Pracy, P. D. G. Pugh, R. J. P. Pugh, N. E. Rankin, K. E. E. Read, Moira K. E. Reaney, A. Q. Ritchie, D. C. Roberts, W. G. Robinson, Elizabeth V. Rohr, Clement Rose, C. D. Routh, M. E. Samrah, G. H. Seale, R. A. Setchell, Sydney Sheare, R. H. Shephard, Joseph Shibko, R. F. Shove, R. L. Shrivastava, Patricia D. Shurly, K. E. D. Shuttleworth, R. L. Sikes, B. P. Skinner, D. M. Smart, Catharine E. Smith, G. B. Smith, I. B. Smith, J. S. Smith, Agnes A. V. Smyth, B. S. H. Storr, S. P. W. Street, J. E. H. Stretton, G. L. Stumbles, B. S. Sweetman, R. E. N. Tattersall, J. D. G. Turner, A. B. Vanscolina, T. R. Waddell, A. M. Walker, R. C. Walsh, H. D. Walters, B. C. WH. Ward, E. N. Watson, C. H. A. Wedeles, J. E. M. Whitehead, M. R. Williams, R. F. Williams, R. J. Williams, R. A. Womersley, T. M. Wood-Robinson, Sophie E. J. Wright, V. J. K. Wright, and Max Zoob.

The following diplomas were conferred jointly with the Royal College of Surgeons to the following:

DOMS.—J. A. Chivers, Philomena M. Guinan, Waldron Harris, H. G. W. Hoare, Miklos Klein, Leonard Lurie, S. J. H. Miller, M. C. Mundle, V. G. Patel, E. C. Richardson, R. H. Rushton, William Shortis, G. L. Simmons, Ronald Spink, Mabel E. Stewart and G. F. Wright.

DMR.—K. E. Barlow, R. J. Carr, F. H. Cross, Kathleen M. Packett and George Steiner.

National University of Ireland

Dr. C. J. McCarthy has been appointed lecturer in mental diseases at University College, Galway.

The following have been elected as representatives to the new senate which holds office for the next five years:

Prof. James O'Connor and Prof. Denis Coffey (University College, Dublin); Prof. James O'Donovan (University College); Prof. Henry Barniville and Prof. Patrick Kiely (Convocation).

Royal College of Surgeons of England

The annual meeting of the fellows and members of the college will be held at the Lincoln's Inn Fields, London, WC2, on Thursday, Nov. 16, at 2.30 PM. Copies of the report of the council may be obtained from the secretary of the college, and also, after Nov. 11, copies of the agenda of the meeting.

The annual report for 1944 states that the council intends to apply, after the war, for a supplemental charter enabling the college: (*a*) to grant fellowships to ophthalmologists (see *Lancet*, Aug. 12, p. 215); (*b*) to grant a fellowship in dental surgery (FDS); (*c*) to increase the number of permitted elections to the fellowship in each year and to render non-members eligible for such election; and (*d*) to coöpt not more than 6 additional members to the council to represent branches of practice not otherwise represented (see *Lancet*, July 1, p. 20). Proposals for further building in Lincoln's Inn Fields are described on p. 605

Society of Apothecaries of London

Today, Friday, Nov. 3, at 2.30 PM at the society's hall in Black Friars Lane, EC4, Surgeon Rear-Admiral C. P. G. Wakeley will speak on surgical warfare in 1944, in place of Colonel Elliott Cutler, who will be unable to attend owing to the exigencies of war service.

Scottish Conjoint Board

At recent examinations of the board of the Royal Colleges of Physicians and Surgeons of Edinburgh, the following were successful:

LRCP & SE, LRFP & S

J. E. Bossman, Enid W. Brett, J. Y. Brown, Aline L. Buchanan, J. S. Gibson Clark, W. H. Dempster, T. W. Duff, R. J. Frame, James Gemmell, Phillip Harris, J. D. Hope, B. D. Jacobson, Leo Jaffe, I. S. Lechler, Joseph Maizel, Gordon Paterson, Maurice R. Pitts, M. M. Salzmann, Ellis Shenken, Herman Shilling, K. S. Stewart, Richard Thomas, J. S. Tugendreich, R. S. Walker and A. L. Walcott.

Norbert Klein, MD PRAGUE, was also admitted to the licentiateship as a graduate of a recognised foreign university.

University of Liverpool

Lieut.-Colonel B. G. Maegraith, who is at present in charge of the Army malaria research unit, has been appointed to the Alfred Jones chair of tropical medicine which has been vacant since the death of Prof. Warrington Yorke last year.

Dr. Maegraith, who is 37 years of age, graduated MB at the University of Adelaide in 1930 before he came to Oxford as a Rhodes scholar. He obtained his B Sc there in 1933, his D Phil. in 1934, and his MA the following year. Meanwhile he had been awarded a Beit fellowship, and had been elected to a fellowship at Exeter College, where he acted as tutor in physiology. In 1937 he was appointed university demonstrator and lecturer in pathology. Dr. Maegraith has also served as dean of the Oxford medical school. In Australia he had made a hæmatological study of the aborigines, and his interests have since centred on the mechanism of hæmolysis, though he has also published papers on the tissue changes following occlusion of the blood-supply and on the effect of section of the renal nerves on hypertension. In the earlier years of the war, before joining the malaria research unit, he was consulting physician and assistant director of pathology in the West African Command. There, with G. M. Findlay and N. H. Martin, he studied the factors present in tissues and blood which may produce or inhibit lysis of blood-cells (*Lancet*, 1943, i, 573). His later observations on blackwater fever appeared in these columns on Sept. 9 and 23. The university council has granted Professor Maegraith leave of absence until he is free to take up his new duties.

Royal College of Obstetricians and Gynæcologists

At a meeting of the council held on Oct. 28, with Mr. Eardley Holland, the president, in the chair, Dr. Leonard Colebrook and Prof. L. G. Parsons were admitted to the fellowship. The following were admitted to the membership:

J. N. I. Emblin, J. P. Erskine, A. H. Maclennan, RCAMC (in absentia), Agnes M. Stewart, Elsie M. Terry, and Irene M. Titcomb.

The following were awarded the diploma of the college:

S. J. Barr, E. K. Blackburn, D. W. Briggs, Maud L. Buchanan, Alison Clarke, Josephine A. Davidson, A. S. Esslemont, P. K. Holding, J. K. Irving, R. J. M. Jamieson, D. L. H. Jones, Max Lipaitz, P. A. T. Lowden, J. M. Pallot, B. D. Patel, Jean A. Robertson, Margaret O. Thorpe, R. A. K. Wiener, and Ruth M. H. Winter.

Research on Sleeping Sickness

The Secretary of State for the Colonies has appointed a commission to advise on the coördination of action, including research, against human and animal trypanosomiasis, and in particular against the tsetse fly. The chairman is Mr. G. H. Creasy and the members include Prof. P. A. Buxton, Dr. H. Lyndhurst Duke, Prof. I. M. Heilbron, Dr. E. M. Lourie and Dr. A. G. H. Smart, with Mr. C. W. F. Footman (Colonial Office) as secretary.

Medical Society of London

On Monday, Nov. 13, at 5 PM, at 11, Chandos Street, W1, Mr. John Everidge will open a discussion on clinical aspects of renal ectopy and fusion.

Middlesex County Medical Society

A meeting will be held at Redhill County Hospital, Edgware, at 2.45 PM, on Saturday, Nov. 11, when Dr. Muriel Rose will speak on the treatment of sterile mating, Dr. S. W. Coffin on the choice of the anæsthetic, and Mr. Frank Forty on the treatment of varicose veins.

Association of Industrial Medical Officers

A joint meeting with the section of psychiatry of the Royal Society of Medicine will be held on Tuesday, Nov. 14, at 1, Wimpole Street, London, W1, at 4 PM, when Dr. Aubrey Lewis, Dr. Elizabeth Bunbury, Dr. Ernest Capel, and Dr. Russell Fraser will open a discussion on psychiatric advice in industry.

A Lister Lecture

The first Lister lecture of the Society of Chemical Industry will be delivered by Sir Alexander Fleming, FRS, in the anatomy lecture theatre of Edinburgh University, on Thursday, Nov. 9, at 5.30 PM. He is to speak on antiseptics. The Lister lecture is one of those lately founded by the society to perpetuate the memory of scientists and industrialists whose work has helped in building the chemical industry, and it has been endowed by Messrs. J. F. Macfarlan & Co., and Messrs. T. and H. Smith, of Edinburgh. The lecture will be delivered every four or five years in Edinburgh, Aberdeen or St. Andrews.

Royal Medical Benevolent Fund

A number of medical officers of health have been elected local secretaries of this fund. The suggestion arose from a speech made by Dr. R. H. Jolly as president of the Society of Medical Officers of Health. Looking at the returns of subscriptions to the RMBF and Epsom College he had been struck, he said, by the difference in different areas. Good results depended on the presence of an energetic local secretary, and he appealed to MOH's, as being in close contact with medical men in their areas, to undertake this work.

The state of the Fund is at present encouraging; subscriptions have increased and there has been a steady flow of bequests, including one from the late Sir StClair Thomson. Dr. C. L. Batteson, medical secretary of the Local Medical and Panel Committee for London, has been appointed treasurer in succession to Dr. Lewis Glover, who has resigned after many years of valued service.

Royal Society of Medicine

There will be a meeting of fellows on Tuesday, Nov. 7, at 4.30 PM. At 5 PM, on the same day, the section of orthopædics will hear papers by Mr. S. A. S. Malkin, Mr. T. T. Stamm, Mr. David Trevor, and Mr. M. E. Wilkinson. On Nov. 8, at 4.30 PM, at the section of physical medicine, Surgeon Commander G. Murray Levick will describe the physical preparation of commandos, and at 5 PM Mr. R. S. Corbett will give a presidential address to the section of proctology, on the surgical treatment of chronic ulcerative colitis. The section of ophthalmology is to meet on Nov. 9, at 5 PM, when Mr. E. W. Godding and Captain John Yudkin will speak on dark-adaptation. The day of the meeting of the clinical section has been changed to Nov. 10, at 2.30 PM.

Association of Approved Societies

At a conference last week this association, which represents 114 societies with a membership of rather less than a million, passed a resolution asking HM Government to review their social insurance plan to promote:

(*a*) For the patient, the avoidance of arbitrary labelling as sick or unemployed and the substitution of a unified test—e.g., "that the applicant has not, without just cause, failed to continue or take up work for which he is medically suitable."
(*b*) For the doctor, a greater emphasis on rehabilitation than on certification.
(*c*) For the community, a scheme which encourages productive effort by making it always a financial advantage to seek light work or part-time work when full duty cannot be performed.

An amendment asking for the retention of the approved society system was rejected by an overwhelming majority.

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as an indication that they are necessarily available for export.

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References: Jour. of Mental Science, Jan. 1941; Jour. of Mental Science, Jan. 1942; Practitioner, Sept. 1942.

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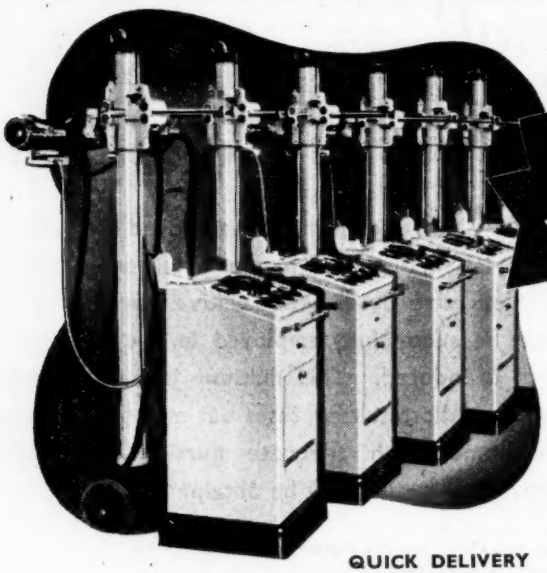

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References: 1. "Treatment of Burns by Envelope Irrigation." *British Medical Journal*, July 12th, 1941, pp. 46-48. 2. "Experiences in an E.M.S. Base Hospital." *Edinburgh Medical Journal*, January, 1942, p. 25. 3. "Treatment of Burns in Air Raid Victims." *Nursing Times*, January 31st, 1942, p. 75.

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L. M. S. S. A.

FINAL EXAMINATION: SURGERY, 4th December, 1944, 8th January, 12th February, 1945. MEDICINE, PATHOLOGY, 11th December, 1944, 15th January, 19th February, 1945. MIDWIFERY, 12th December, 1944, 16th January, 21st February, 1945. MASTERY OF MIDWIFERY EXAMINATIONS, May and November.

For regulations apply REGISTRAR, Apothecaries' Hall, Black Friars-lane, London, E.C.4.

UNIVERSITY OF LONDON.

A course of instruction for the Academic Postgraduate Diploma in Medical Radiology will begin on MONDAY, 8TH JANUARY, 1945. Application for admission, including details of professional qualifications and experience, should be addressed to Prof. W. V. MAYNEORD, University of London, c/o Richmond College, Richmond, Surrey, before Monday, 20th November, 1944.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

PROPHIT RESEARCH STUDENTSHIP.

A candidate will shortly be nominated by the Council of the Royal College of Surgeons of England for a Prophit Studentship in Cancer Research.

The annual value of the Studentship will be £500, with an allowance not exceeding £200 for expenses of travelling, and will be for 9 months in the first instance, but renewable annually at the discretion of the Special Trustees on the nomination of the Council of the College.

Students may be male or female.

Applications, giving a statement of the proposed research and place of work, and accompanied by a recommendation from a member of the staff of the applicant's Medical School or University, should be sent to the Secretary, Royal College of Surgeons, Lincoln's Inn-fields, W.C.2, before 28th November, 1944. KENNEDY CASSELS, Secretary.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

Professor C. BRUCE PERRY, M.D., F.R.C.P., will deliver the BRADSHAW LECTURE ON THURSDAY, 9TH NOVEMBER, at 2.30 P.M., at the College, Pall Mall East, S.W.1.

Subject: "The Ætiology of Erythema Nodosum."

Any Member of the Medical Profession admitted on presentation of card. By Order of the President.

H. E. A. BOLDERO, Registrar.

EXAMINING SURGEONS: Factories Act, 1937. The following appointments as Examining Surgeon under the Factories Act, 1937, are vacant. Applications should be sent to the Chief Inspector of Factories, St. James's-square, London, S.W.1.

District	*County*	*Latest date for receipt of application*
BRIGSTOCK ..	NORTHAMPTON ..	14TH NOVEMBER, 1944
MITCHELDEAN ..	GLOUCESTER ..	14TH NOVEMBER, 1944
LINCOLN ..	LINCOLN	14TH NOVEMBER, 1944
ST. AUSTELL ..	CORNWALL ..	14TH NOVEMBER, 1944

LONDON COUNTY COUNCIL. Medical Practitioners required for the undermentioned positions:—

(1) TEMPORARY ASSISTANT MEDICAL OFFICER, Class I (B1). Salary £350 a year, rising by £25 a year to £425 a year, plus temporary cost-of-living bonus:—

Hospital	*Duties*
Paddington Hospital, Harrow-road, W.9.	Casualty Officer.
Bethnal Green Hospital, Cambridge Heath-road, E.2.	Medical.

Suitably qualified R and W practitioners holding B2 appointments, also R and W practitioners holding B1 appointments and rejected by the R.A.M.C., may apply.

(2) TEMPORARY ASSISTANT MEDICAL OFFICER, Class II (B2). Salary £250 a year, plus temporary cost-of-living bonus.

(*a*) Various hospitals in the Infectious Hospitals Service (persons appointed to the Infectious Hospitals Service are eligible for promotion to Class I (B1) (temporary rank) in that service after a minimum period of 6 months).

*(*b*) Queen Mary's Hospital for Children, Carshalton (temporarily evacuated to Dryburn Emergency Hospital, Durham City).	Orthopædic work.
Paddington Hospital, Harrow-road, W.9 (2 vacancies).	(*a*) General medical.
	(*b*) Obstetrics.
St. James' Hospital, Ouseley-road, Balham, S.W.12.	Obstetrics.
St. Giles' Hospital, St. Giles'-road, Camberwell, S.E.5.	General medical.
St. Mary, Islington, Hospital, Highgate Hill, N.19.	General medical.

* No accommodation for a woman.

R and W practitioners who now hold A posts may apply, when appointment will be limited to 6 months.

(3) HOUSE SURGEON (Male) at Queen Mary's Hospital for Children, Carshalton (temporarily evacuated to Dryburn Emergency Hospital, Durham City). Salary £120 a year, plus temporary cost-of-living bonus. R practitioners within 3 months of qualification may apply, when the appointment will be limited to 6 months.

All the above appointments are with board, lodging, and washing. Married quarters are not available.

Application forms obtainable (stamped foolscap envelope required) from the Medical Officer of Health (S.D.2), The County Hall, S.E.1, returnable by 20th November, 1944. Canvassing disqualifies.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. 2 vacancies for HOUSE PHYSICIANS (B2) will occur on 1st January, 1945. Salary £200 p.a., with full residential emoluments. One post is tenable at the Children's Unit at the Sector Hospital, Hemel Hempstead, and the other at the above address. Both appointments are for 6 months. R and W practitioners now holding A posts, and practitioners of either sex ineligible for military service or rejected by the R.A.M.C., may apply.

Further particulars and forms of application, which must be returned not later than 27th November, 1944, are obtainable from: H. F. RUTHERFORD, Secretary.

October, 1944.

THE HOSPITAL FOR SICK CHILDREN, Country Branch Hospital, TADWORTH, SURREY. (110 Beds.) Required at an early date an ASSISTANT RESIDENT MEDICAL OFFICER (B1). Salary £350 p.a., with full residential emoluments. R and W practitioners holding B2 appointments, also those now holding B1 and rejected by the R.A.M.C., may apply.

Further particulars, and forms of application, which must be returned not later than the 20th November, are obtainable from: H. F. RUTHERFORD, Secretary.

October, 1944.

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 60, Grove End-road, N.W.8. Applications are invited from registered medical practitioners (Male), including practitioners within 3 months of qualification and liable under the National Service Acts, for the appointment of HOUSE PHYSICIAN (A), vacant 1st December, 1944. Appointment will be for a period of 6 months. Salary is at the rate of £150 p.a., with full residential emoluments.

F. DUDLEY HOBBS, B.A., Secretary.

MIDDLESEX COUNTY COUNCIL. 2 Resident Junior Assistant MEDICAL OFFICERS (B2) required at Clare Hall County Hospital, South Mimms, Middlesex. (560 Beds for tuberculosis.) Applications invited from registered medical practitioners, including R and W practitioners who now hold A posts. Salary £250 p.a., plus cost-of-living bonus. Board, lodging, and laundry. Whole-time duties, such as Council may require, under supervision of Medical Director. Appointments, subject to medical examination and 1 month's notice, are for 6 months with possibility of extension to 12 months (except in case of R and W practitioners). Posts vacant 1st December, 1944.

Applications, stating age, nationality, qualifications, present post and previous experience, enclosing copies of not more than 3 recent testimonials, to the Medical Director, "B3," of Hospital. Application forms not provided. Closing date 11th November, 1944.

C. W. RADCLIFFE, Clerk of the County Council.

Middlesex Guildhall, Westminster, S.W.1.

MIDDLESEX COUNTY COUNCIL. Resident Assistant Medical OFFICER (Anæsthetist, B1) required at North Middlesex County Hospital, Edmonton, N.18. Applications invited from registered medical practitioners (including R and W practitioners holding B2 posts) who have held resident appointments in general hospitals and had special experience in administering anæsthetics. Preference given to candidates with Diploma in Anæsthetics. R and W practitioners holding B1 posts ineligible unless rejected by R.A.M.C. Salary £400 by £25 to £475 p.a., plus cost-of-living bonus (now 19s. per week less deduction for residential emoluments). Board, lodging, and laundry. Whole-time duties, such as Council may require, under general supervision of Medical Director, will consist mainly in administering anæsthetics. Appointment is for 4 years only, subject to medical examination and 1 month's notice. Post vacant immediately.

Applications, stating age, nationality, qualifications, present post and previous experience, enclosing copies of not more than 3 recent testimonials, to the undersigned. Application forms not provided. Closing date 11th November, 1944.

C. W. RADCLIFFE, "B3," Clerk of the County Council.
Middlesex Guildhall, Westminster, S.W.1.

THE ROYAL CANCER HOSPITAL (FREE) (Incorporated under Royal Charter), Fulham-road, London, S.W.3. Applications are invited for the post of HOUSE SURGEON (A). Salary at the rate of £200 p.a. The appointment is subject to rules, a copy of which can be obtained from the Secretary. Practitioners within 3 months of qualification and liable under the National Service Acts may also apply, when appointment will be for 6 months, to commence duty on the 1st December, 1944.

Applications, to be made on a form which will be supplied by the Secretary, with copies only of not more than 3 recent testimonials, to be sent to the Secretary not later than the first post on Monday, 6th November, 1944.

V. H. PINKHAM, Secretary.

THE ROYAL CANCER HOSPITAL (FREE) (Incorporated under Royal Charter), Fulham-road, London, S.W.3. Applications are invited for the post of JUNIOR ASSISTANT RADIO-THERAPIST. Commencing salary £550 p.a. Applicants must be registered medical practitioners who hold a Diploma in Medical Radiology. The appointment will be for a period of 12 months and subject to renewal.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of 3 recent testimonials, should be sent to the Secretary by first post Wednesday, 8th November, 1944.

ROYAL FREE HOSPITAL, Gray's Inn-road, London, W.C.1. Applications are invited from registered medical practitioners for the appointment of RESIDENT MEDICAL REGISTRAR (B1). Applicants must not be more than 10 years qualified. Salary is at the rate of £250 to £550. Duties to commence 1st January, 1945. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners now holding B1 and rejected by the R.A.M.C., may apply.

Applications, stating age, qualifications, and accompanied by copies of 3 recent testimonials, should be sent on or before 2nd December to: RICHARD T. BARTLEY, Secretary.

NORTHUMBERLAND COUNTY COUNCIL. Hexham EMERGENCY HOSPITAL. (Regional Orthopædic Centre—640 Beds.) Applications are invited from registered medical practitioners, Male or Female, for the appointment of SENIOR HOUSE SURGEON (B2). The salary is at the rate of £200 p.a., with full residential emoluments. The Hospital offers excellent training and experience in orthopædic surgery. R and W practitioners who now hold A posts may apply, when appointment will be limited to 6 months; otherwise for a period of 1 year.

Applications, stating age, nationality, qualifications, and accompanied by 2 recent testimonials, should be sent to—

J. B. TILLEY, County Medical Officer.

County Hall, Newcastle upon Tyne, 1.

NORTHUMBERLAND COUNTY COUNCIL. Hexham EMERGENCY HOSPITAL. (REGIONAL ORTHOPÆDIC CENTRE—640 Beds.) HOUSE SURGEONS (A). Applications for the above posts are invited from registered medical practitioners, Male or Female. Salary is at the rate of £120 p.a., with full residential emoluments. The Hospital offers excellent training and experience in orthopædic surgery. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months; otherwise for a period of 1 year.

Applications, stating age, nationality, qualifications, and accompanied by 2 recent testimonials, should be sent to—

J. B. TILLEY, County Medical Officer.

County Hall, Newcastle upon Tyne, 1.

BOOTLE GENERAL HOSPITAL, Linacre-lane, Bootle, Liverpool, 20. Applications are invited from registered medical practitioners, Male and Female, for the 2 appointments of HOUSE SURGEON (A) and CASUALTY OFFICER (A). Salary is at a rate of £200 p.a., with full residential emoluments for each position. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when the appointments will be for a period of 6 months; otherwise for 6 months with the possibility of extension.

Applications, with copies of recent testimonials, should be sent as soon as possible to: A. J. COOPER, Superintendent.

ROYAL BERKSHIRE HOSPITAL, Reading. Applications are invited from registered medical practitioners for the appointment of RESIDENT SURGICAL OFFICER (B1), vacant 1st January, 1945. Applicants should have held house appointments and had surgical experience. Preference will be given to candidates holding diploma of F.R.C.S. Salary is at the rate of £250 p.a., with board, residence, and laundry. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners now holding B1 and rejected by the R.A.M.C., may apply.

Applications to be sent immediately to—

H. E. RYAN, Secretary and House Governor.

NUNEATON EMERGENCY HOSPITAL. (320 Beds.) County of WARWICK. Applications are invited from registered medical practitioners for the appointment of RESIDENT SURGICAL OFFICER (B1), vacant shortly. Applicants should have held house appointments and had surgical experience. Salary is at the rate of £350 p.a., with full residential emoluments. The appointment is limited to a period of 1 year. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners now holding B1 and rejected by the R.A.M.C., may apply.

Applications on forms to be obtained from the Public Assistance Officer, Shire Hall, Warwick, should be returned to him not later than the 15th November, 1944.

RHONDDA URBAN DISTRICT COUNCIL. Applications are invited from registered medical practitioners of either sex for appointment as TEMPORARY ASSISTANT MEDICAL OFFICER, under the supervision of the Council's Medical Officer of Health and School Medical Officer, at a salary of £600, rising by annual increments of £25 to £700 p.a., plus the prevailing war bonus.

Forms of application and conditions of appointment may be obtained from the Medical Officer of Health, Tydfil House, Pentre, Rhondda, by whom completed applications must be received not later than Thursday, the 16th November, 1944.

D. J. JONES, Clerk of the Council.

CAMBRIDGESHIRE COUNTY COUNCIL. County Hospital. Applications are invited for the post of RESIDENT OBSTETRIC OFFICER (B2) at the above Hospital. Salary is at the rate of £200, with full residential emoluments. Male and Female practitioners holding A posts may apply, when the appointment is limited to 6 months.

Applications are also invited for the post of HOUSE PHYSICIAN (A). Salary £150 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Applications, with copies of recent testimonials, should be sent at once to the Clerk of the Cambridgeshire County Council, Shire Hall, Castle Hill, Cambridge.

26th October, 1944.

LIVERPOOL AND DISTRICT HOSPITAL FOR DISEASES OF THE HEART and INSTITUTE OF RESEARCH FOR THE PREVENTION OF DISEASE. JUNIOR PHYSICIAN and DEPUTY DIRECTOR of the Institute. Applications are invited for the above positions. Unique facilities for research. Honorarium. Candidates from outside Liverpool will receive consideration.

Applications, on or before 1st May, 1945, to Secretary, Heart Hospital, 34, Oxford-street, Liverpool, 7.

SOUTHEND GENERAL HOSPITAL. First House Surgeon (B2) required to commence duty on 13th November. This post is recognised by the Royal College of Surgeons. Salary at the rate of £150 p.a., with full residential emoluments. R practitioners who now hold A posts may apply. The appointment is limited to 6 months.

Applications to be sent immediately to—

P. H. CONSTABLE, House Governor and Secretary.

CITY AND COUNTY OF BRISTOL. Department of Public Health. HAM GREEN HOSPITAL AND SANATORIUM. Applications are invited from registered medical practitioners, Male or Female, for the appointment of ASSISTANT RESIDENT MEDICAL OFFICER (B2), vacant shortly. Salary is at the rate of £200 p.a., with full residential emoluments. R and W practitioners who now hold A posts may apply, when the appointment will be limited to 6 months; otherwise for a period of 1 year.

Application forms may be obtained from the undersigned, to whom they must be returned, accompanied by copies of not more than 3 recent testimonials, forthwith.

R. H. PARRY, Medical Officer of Health.

Kenwith Lodge, Westbury Park, Bristol, 6.

TORBAY HOSPITAL, Torquay. (223 Beds.) Applications are invited from registered medical practitioners, Male and Female, for appointment on 1st December (or earlier) as HOUSE SURGEON (A). Salary is at the rate of £175 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may also apply, when appointment will be for 6 months; otherwise for 6 months renewable at the pleasure of the Committee.

Applications, giving qualifications, age, nationality, &c., should be sent to: E. L. GRIST, Secretary.

30th October, 1944.

MAIDSTONE RURAL DISTRICT COUNCIL. Loose Isolation HOSPITAL. Part-time MEDICAL OFFICER. The Council invite applications from medical practitioners for the above appointment which necessitates a daily visit to the Hospital should there be patients in residence needing attention. The salary, which is subject to superannuation, is at the rate of £60 p.a. with a fee of 12s. 6d. for every patient over 40 in number admitted during any 1 year.

Applications, stating qualifications (particularly experience of the diagnosis and modern methods of treatment of infectious disease), age, and length of service as a practitioner, should be submitted to Dr. A. W. Gaye, Medical Officer of Health, Yellowbois, Cranbrook, on or before the 22nd November, 1944.

GEO. G. LETCHFORD, Clerk.

Council Offices, 26, Tonbridge-road, Maidstone.

CALDERSTONES EMERGENCY HOSPITAL, Whalley, near BLACKBURN. Applications are invited from registered medical practitioners for the appointment of HOUSE SURGEONS (A) (2 posts). Salary is at the rate of £120 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months; otherwise for an indefinite period not exceeding 1 year.

Applications for the above posts, stating age, qualifications with dates, and nationality, and accompanied by copies of 3 recent testimonials, should be sent to the Medical Superintendent as soon as possible.

24th October, 1944.

BOROUGH OF LLANELLY. Applications are invited from duly qualified medical practitioners, not over 45 years of age, holding the Diploma in Public Health, for the position of TEMPORARY MEDICAL OFFICER OF HEALTH AND SCHOOLS MEDICAL OFFICER. The appointment, which is in succession to the present holder who retires next month, is temporary during the war and subject to the provisions of the Local Government Superannuation Act, 1937. The person appointed will be required to perform all the duties imposed on a Medical Officer of Health, under relevant Acts and Orders, to undertake the administration of the Schools Medical Service, Maternity and Child Welfare Service, to act as the Medical Superintendent of the Maternity Home, and carry out such other duties as the Town Council may direct. The successful candidate must reside within the Borough, devote the whole of his time to the duties of the office, and shall not hold any other appointment without the consent of the Council. The salary will be at the rate of £800 p.a., plus cost-of-living bonus.

Applications (endorsed "Medical Officer of Health"), stating age, liability for military service, experience, and qualifications, to reach me on or before the 13th day of November, 1944.

DAVID J. PHILLIPS, Town Clerk.

Town Hall, Llanelly, 23rd October, 1944.

GLASGOW ROYAL INFIRMARY. Applications are invited from registered medical practitioners, exempt from military service or discharged from the Forces, for the post of REGISTRAR (B1) to the Burns Wards (resident). Salary £300 p.a. Particulars as to duties, &c., may be obtained from the Superintendent, Glasgow Royal Infirmary, 84, Castle-street, Glasgow, C.4.

Applications, with 3 names for reference, to be lodged with the undersigned. No canvassing.

R. MORRISON SMITH, C.A., F.H.A., Secretary and Cashier.

Office: 135, Buchanan-street, Glasgow, C.1.

GLASGOW ROYAL INFIRMARY. The Managers invite applications from registered medical practitioners for the post of RESIDENT ASSISTANT MEDICAL SUPERINTENDENT (B1). Salary £450 p.a. Particulars as to duties, &c., may be obtained from the Superintendent, Glasgow Royal Infirmary, 84, Castle-street, Glasgow, C.4. Registered practitioners holding B1 or B2 posts and rejected by the R.A.M.C. and who have obtained the sanction of the Scottish Medical War Committee may also apply.

Candidates are informed that no canvassing is allowed and they are requested to lodge applications with the undersigned, stating age, qualifications with dates, nationality, and 3 names for reference.

R. MORRISON SMITH, C.A., F.H.A., Secretary and Cashier.

Office: 135, Buchanan-street, Glasgow, C.1.

GLASGOW ROYAL INFIRMARY. Applications are invited from registered medical practitioners for the post of ASSISTANT RADIOLOGIST (B1) (full-time). Salary according to experience, but not less than £500 p.a. Suitably qualified R and W practitioners applying for the post should first obtain permission from the Scottish Central Medical War Committee. Full particulars may be obtained from the Superintendent, Glasgow Royal Infirmary, 84, Castle-street, Glasgow, C.4.

Applications, stating age, qualifications, and experience, with 3 names for reference, should be sent to: R. MORRISON SMITH, C.A., F.H.A., Secretary and Cashier, Glasgow Royal Infirmary, 135, Buchanan-street, Glasgow, C.1. No canvassing.

ST. MARGARET'S HOSPITAL, Epping. Applications are invited from registered medical practitioners, Male and Female, including R and W practitioners who now hold A posts, for the appointment of HOUSE OFFICER (B2) at the above Hospital. The salary is at the rate of £200 p.a., with full residential emoluments. To R or W practitioners the appointment will be limited to 6 months; otherwise will not exceed 1 year.

Applications should be made in writing to the County Medical Officer, County Hall, Chelmsford, and should include applicant's full name, age, nationality, qualifications, and details of previous posts (if any), and whether liable under the National Service Acts.

THE WEST RIDING OF YORKSHIRE HOSPITALS BOARD. PINDERFIELDS EMERGENCY HOSPITAL, WAKEFIELD. Applications are invited from registered medical practitioners, Male and Female, including R and W practitioners who now hold A posts, for the appointment of RESIDENT HOUSE SURGEON (B2), vacant end of November. Duties will be undertaken in the Peripheral Nerve and Orthopædic Centres of the Pinderfields Emergency Hospital. Salary will be at the rate of £200 p.a., with full residential emoluments. To R or W practitioners the appointment will be limited to 6 months.

Applications, with full particulars, to be submitted to the Medical Superintendent, Pinderfields Emergency Hospital, Wakefield, forthwith. G. L. BANNER, Clerk of the Board.

Board Offices, Victoria Chambers, Wood-street, Wakefield, October, 1944.

KING EDWARD VII HOSPITAL, Windsor. Applications are invited from registered medical practitioners, Male and Female, for the following appointments:—

HOUSE SURGEON (B2), surgical post. R and W practitioners who now hold A posts may apply, when the appointment will be limited to 6 months.

HOUSE SURGEON (A). Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when the appointment will be for a period of 6 months.

Both appointments become vacant beginning of December and salary is at the rate of £150 p.a., with full residential emoluments.

Applications, with copies of recent testimonials, to be sent by 18th November, 1944, to: G. WESTON, Secretary.

WORCESTER CITY AND COUNTY EYE HOSPITAL. HONORARY SURGEON (temporary, as requested by the British Medical Association). Applications are invited from registered medical practitioners, having held a post of Resident House Surgeon at a recognised Eye Hospital, for the appointment of additional Honorary Surgeon to the above Hospital.

Applications should be addressed to the Chairman, Worcester City and County Eye Hospital, Barbourne-road, Worcester.

VICTORIA HOSPITAL, Accrington. Applications are invited from medical practitioners for the following appointments:—

HOUSE SURGEON (B2). The salary is at the rate of £200 p.a., with full residential emoluments. R and W practitioners who now hold A posts may apply, when the appointment will be for a period of 6 months.

HOUSE PHYSICIAN (A). Salary is at the rate of £175 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Applications, with copies of testimonials, to Honorary Secretary, Victoria Hospital, Accrington.

ROYAL SEA-BATHING HOSPITAL, Margate. (320 Beds.) Applications are invited from registered medical practitioners, including practitioners within 3 months of qualification and liable under the National Service Acts, for the appointment of HOUSE SURGEON (A). The appointment will be for a period of 6 months with salary at the rate of £200 p.a., with full residential emoluments. *The work of the Hospital is being carried on temporarily at South Hill Park, Bracknell, Berkshire (88 Beds), and it affords special opportunity for the study of surgical tuberculosis.* The selected candidate will be required to commence his duties at the earliest opportunity.

Applications, stating age, previous experience, with copies of 3 recent testimonials, should be sent to the Secretary, R.S.B.H. Offices, Little Remenham, Bracknell, Berks.

DERBYSHIRE ROYAL INFIRMARY, Derby. (Voluntary Hospital: Total Beds 416, plus 230 E.M.S.) Applications are invited from registered medical practitioners, Male and Female, for the appointment of CASUALTY OFFICER (A), now vacant. Salary is at the rate of £200 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of 6 months.

Applications should be sent to—

ARTHUR TAYLOR, Superintendent and Secretary.

COUNTY BOROUGH OF ROTHERHAM. Municipal General HOSPITAL. Applications are invited from fully registered medical practitioners with the necessary knowledge and experience of hospital work (including practitioners within 3 months of qualification and liable under the National Service Acts) for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER (A). The appointment will be for a period of 6 months. Salary is at the rate of £200 p.a., together with full residential emoluments. A temporary bonus amounts at present to 9s. 6d. per week.

Forms of application may be obtained from the Medical Superintendent, the Municipal General Hospital, Moorgate, Rotherham, and must be returned, endorsed "Assistant Medical Officer," not later than the 15th November, 1944, to—

CHARLES DES FORGES, Town Clerk.

Municipal Offices, Rotherham, 24th October, 1944.

SURREY COUNTY COUNCIL. Kingston County Hospital, Wolverton-avenue, KINGSTON-ON-THAMES. ST. HELIER COUNTY HOSPITAL, CARSHALTON. Applications are invited from registered medical practitioners, Male and Female, for the appointment of 2 HOUSE SURGEONS (A) at Kingston, and HOUSE PHYSICIANS (A) and HOUSE SURGEONS (A) at St. Helier. Salary is at the rate of £120 p.a., plus full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when each appointment will be for a period of 6 months; otherwise for a period not exceeding 1 year.

Apply to the Medical Superintendent of appropriate hospital.

THE WATFORD AND DISTRICT PEACE MEMORIAL HOSPITAL. (310 Beds.) Applications are invited from registered medical practitioners for the appointment of HOUSE PHYSICIAN (B2). Salary will be at the rate of £200 p.a., with full residential emoluments. R and W practitioners who hold A posts may apply, when appointment will be limited to 6 months.

Applications, stating age, qualifications, and experience, together with copies of 2 recent testimonials, should be sent immediately to: H. M. MASKELL, Administrator.

KENT AND SUSSEX HOSPITAL, Tunbridge Wells. Applications are invited from registered medical practitioners (Male and Female) for the appointment of RESIDENT ANÆSTHETIST AND HOUSE PHYSICIAN (B2), vacant 5th December, 1944. Salary at the rate of £200 p.a., with full residential emoluments. R and W practitioners holding A posts may also apply, when appointment will be limited to 6 months; otherwise for a period of 6 to 12 months.

Applications to: E. A. WAGSTAFF, Superintendent-Secretary. 25th October, 1944.

KENT AND SUSSEX HOSPITAL, Tunbridge Wells. Locum SENIOR EAR, NOSE, AND THROAT RESIDENT with some experience required from 3rd to 15th December, 1944. Salary from £7 7s. per week according to experience.

Applications to: E. A. WAGSTAFF, Superintendent-Secretary. 25th October, 1944.

CITY OF LIVERPOOL. Fazakerley Sanatorium. (470 Beds.) Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER (B2). The above Sanatorium is for the treatment of pulmonary and non-pulmonary tuberculosis. The salary is at the rate of £350 p.a., with full residential allowances. All fees received in connexion with the appointment to be handed over to the City Council. The appointment will be made in accordance with the Standing Orders of the City Council and will be determinable by 1 month's notice on either side. R and W practitioners who now hold A posts may apply, when the appointment will be limited to 6 months; otherwise for a period of 12 months.

Applications, stating whether R or W practitioner, age, nationality, qualifications with dates, experience and details of previous appointments, and accompanied by 3 recent testimonials, should be endorsed "Resident Medical Officer" and sent forthwith to: W. H. BAINES, Town Clerk.

Municipal Buildings, Dale-street, Liverpool, 2, October, 1944.

NOTTINGHAM GENERAL HOSPITAL. Applications are invited from registered medical practitioners (Male and Female) for the appointment of RESIDENT CASUALTY OFFICER (A) for the above Hospital. Duties to commence immediately. Salary at the rate of £200 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be sent to—

HENRY M. STANLEY, House Governor and Secretary.

GENERAL HOSPITAL, Nottingham. (794 Beds, including E.M.S. Beds.) SECOND PATHOLOGIST (whole time) required, experienced in histology and morbid anatomy. Temporary appointment with possibility of confirmation after the war. Commencing salary £900 p.a.

Apply, with copies of testimonials, giving details of experience and qualifications, to House Governor and Secretary, General Hospital, Nottingham.

ROYAL HAMPSHIRE COUNTY HOSPITAL, Winchester. (462 Beds.) Applications are invited from registered medical practitioners, Men and Women, for the appointment of RESIDENT ANÆSTHETIST (B2), vacant 1st December. The post carries with it some casualty and other work. Salary according to qualifications and experience, with a minimum of £250 p.a., with full residential emoluments. R and W practitioners who now hold A posts may apply, when appointment will be limited to 6 months.

Applications, stating age, qualifications with dates, experience, and nationality, and accompanied by copies of 3 recent testimonials, should be sent to—

D. M. STANBURY, Acting Superintendent and Secretary.

COUNTY MENTAL HOSPITAL, Barrywood, Northampton. TEMPORARY ASSISTANT MEDICAL OFFICER (B1), unestablished, required at the above Mental Hospital. Salary 9 guineas per week and full residential emoluments. Previous mental experience not essential. Suitably qualified R practitioners holding B2 appointments, also those now holding B1 and rejected by the R.A.M.C., may apply.

Applications should be sent to the Medical Superintendent.

SOUTHPORT GENERAL INFIRMARY. (186 Beds.) Applications are invited from registered medical practitioners (Male or Female, single), including practitioners within 3 months of qualification and liable under the National Service Acts, for the appointment of HOUSE SURGEON (A), vacant immediately. 6 months' appointment. Salary is at the rate of £200 p.a., with full residential emoluments.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of recent testimonials, should be addressed immediately to the Superintendent, Infirmary, Southport.

ROTHERHAM HOSPITAL. (General Voluntary Hospital—140 Beds.) Applications are invited from registered medical practitioners (Male or Female) for the appointment of SECOND CASUALTY OFFICER AND HOUSE SURGEON (A) to Ear, Nose, and Throat and Eye Departments, vacant 1st November, 1944. Salary £225 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may also apply, when the appointment will be for 6 months.

Applications should be sent at once to the Secretary-Superintendent.

ROYAL SHEFFIELD INFIRMARY AND HOSPITAL. The Royal INFIRMARY, SHEFFIELD. Applications are invited from registered medical practitioners (Male and Female) for the post of ASSISTANT CASUALTY OFFICER (A), now vacant. Salary is at the rate of £80 p.a., with full residential emoluments and a bonus of £20 payable at the expiration of 6 months' satisfactory service. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when the appointment will be for a period of 6 months.

Applications should be sent forthwith to: PERCY N. GLASS, General Superintendent, The Royal Infirmary, Sheffield, 6.

21st October, 1944.

ROYAL INFIRMARY, Preston. Applications are invited from registered medical practitioners (including practitioners within 3 months of qualification and liable under the National Service Acts) for the following posts :—

HOUSE SURGEON (A) to Consulting Surgeon (recognised for the F.R.C.S. examination).

HOUSE SURGEON (A) to Ophthalmic and Aural Departments with some duties in medical wards (recognised for the D.O.M.S. and D.L.O. examinations).

Salary in each case at the rate of £150 p.a., with full residential emoluments. 6 months' appointment.

Applications, with full details, to be sent to the Superintendent.

COVENTRY AND WARWICKSHIRE HOSPITAL. Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (B2) to the Gynæcological and Obstetric Department, vacant 18th November next. The appointment is for 6 months. Salary at the rate of £170 p.a., together with full resident emoluments. R and W practitioners holding A posts may apply.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of 3 recent testimonials, should be sent immediately to—

S. CECIL HILL, House Governor and Secretary.

WHITCHURCH EMERGENCY HOSPITAL, Cardiff. (800 Beds.) Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEONS (A) (3 vacancies), vacant 1st Nov. Salary is at the rate of £200 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointments will be for a period of 6 months.

Applications, stating age, qualifications, and nationality, should be accompanied by copies of recent testimonials and sent to the Medical Superintendent.

COUNTY BOROUGH OF HUDDERSFIELD. Appointment of ASSISTANT MEDICAL OFFICERS OF HEALTH (2 vacancies). Applications are invited from registered medical practitioners (Ladies) who have had special experience in antenatal work and in the care of infants. Salary £500–£25–£700, with additional war bonus, at present £40 6s. Initial salary according to experience. The post will be designated under the Local Government Superannuation Acts, and the successful candidate will be required to pass a medical examination before being appointed to the position.

Applications, stating age, full particulars regarding training, qualifications, and appointments held since qualification, should be forwarded to the Medical Officer of Health, Public Health Department, Huddersfield, along with copies of 2 recent testimonials, so as to reach him not later than Saturday, 11th November, 1944. Application forms are not provided.

SAMUEL PROCTER, Town Clerk.

Town Hall, Huddersfield, October, 1944.

NORTHAMPTON GENERAL HOSPITAL. Applications are invited for a LOCUM RADIO-DIAGNOSTICIAN for the period 20th November to 11th December, 1944. Salary according to experience.

Applications to: GORDON S. STURTRIDGE.

HUDDERSFIELD ROYAL INFIRMARY. (321 Beds.) Resident ANÆSTHETIST AND ASSISTANT CASUALTY OFFICER (A), required to commence shortly. Salary at the rate of £150, with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Applications should be sent as soon as possible to—

H. J. JOHNSON, General Superintendent and Secretary.

ROYAL UNITED HOSPITAL, Bath. Applications are invited from registered medical practitioners for the appointment of 2 HOUSE SURGEONS (A) (1 general and 1 Gynæcology and Anæsthetics). Salary for each post £150 p.a., with board, residence, and laundry. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointments will be for a period of 6 months.

Applications at once to— J. LAWRENCE MEARS,
20th October, 1944. Secretary-Superintendent.

WARRINGTON INFIRMARY AND DISPENSARY. Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (A), now vacant. Salary is at the rate of £150 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Apply immediately to the Superintendent and Secretary.

COUNTY BOROUGH OF BLACKBURN. Applications are invited from registered medical practitioners (Male or Female) for the post of RESIDENT JUNIOR ASSISTANT MEDICAL OFFICER (A) at Queen's Park Hospital and Institution, Blackburn, at a salary of £250 p.a., together with board, apartments, and attendance. The appointment will be limited to a term not exceeding 1 year, or a period of 6 months if held by a practitioner within 3 months of qualification and liable under the National Service Acts, who may apply.

Further particulars may be obtained from the Public Assistance Officer, Cardwell-place, Blackburn, to whom applications, stating age, qualifications, and experience, accompanied by copies of 3 recent testimonials, must be sent.

CHAS. S. ROBINSON, Town Clerk.

BIRMINGHAM ACCIDENT HOSPITAL AND REHABILITATION CENTRE. Applications are invited from registered medical practitioners, Male and Female, including practitioners within 3 months of qualification and liable under the National Service Acts, for the appointment of HOUSE SURGEON (A), vacant 8th November, 1944. Appointment will be for 6 months. Salary is at the rate of £150 p.a., with full residential emoluments.

23rd October, 1944. A. A. MACIVER, Secretary.

BIRMINGHAM ACCIDENT HOSPITAL AND REHABILITATION CENTRE. Applications are invited from registered medical practitioners, Male and Female, including R and W practitioners who now hold A posts, for the appointment of HOUSE SURGEON (B2) for the Medical Research Council Burns Unit, now vacant. The appointment will be for 6 months. The salary is at the rate of £150 p.a., with full residential emoluments.

23rd October, 1944. A. A. MACIVER, Secretary.

BROMLEY AND DISTRICT HOSPITAL, Bromley, Kent. Applications are invited for the posts of FIRST and SECOND HOUSE SURGEON (A), duties to commence immediately. Salary £175 and £150 p.a. respectively, with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Applications should be addressed to the Secretary as soon as possible.

WORCESTER ROYAL INFIRMARY. Applications are invited for the position of HOUSE SURGEON (A), vacant 7th December. The salary will be at the rate of £120 a year, with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Applications, with copies of not more than 3 testimonials, should be addressed to—

HAROLD WIGG, Acting Superintendent-Secretary.

CHESTERFIELD AND NORTH DERBYSHIRE ROYAL HOSPITAL. Applications are invited from registered medical practitioners (Male or Female) for the posts of HOUSE SURGEON (A) and ASSISTANT CASUALTY OFFICER (A). Salary in each case is at the rate of £165 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may also apply, when appointments will be for 6 months.

Applications to be forwarded as soon as possible to—

M. H. BOONE, House Governor and Secretary.

ROYAL EASTERN COUNTIES' INSTITUTION FOR THE MENTALLY DEFECTIVE, COLCHESTER. Applications are invited from registered Male medical practitioners for the post of MEDICAL SUPERINTENDENT at the above Institution. This Institution is the second oldest of the original 5 Charitable Institutions for defectives and now consists of a Central Institution and 8 branches. It is a certified institution under the Mental Deficiency Act and a special school under the Education Acts. It is not yet a Local Authority Institution, but certain County Councils are under agreement to take over the Institution when so requested by the present managers. Till then it has its own pension scheme. If the candidate appointed is in the service of a Local Authority he will be compensated for loss of present superannuation rights by a payment from the Institution to the Institution pension fund to assure him a number of years pension rights, the period of which will be fixed by arrangement. Numbers on books 2140, resident 1790. The Medical Superintendent is the Director and Administrative Head of both the Central Institution and all its branches, though each branch has its own head, either medical superintendent, matron, or headmaster, who works under his direction. There is a Research Department and Laboratory. Previous experience in a mental deficiency institution or a mental hospital and administrative experience is essential. Applications from medical men at present in the services will be considered. Salary will rise to £2000 a year by increments of £100 a year with emoluments. The commencing salary will depend materially on the successful candidate's experience, especially in administration, but will not be less than £1200 a year. Emoluments are house, light, gas, coal, laundry, and vegetables. Till the Superintendent's house is built on the estate, a house will be made available in Colchester.

Apply, with usual particulars, not later than 15th November, 1944, to Medical Superintendent, Royal Institution, Colchester.

ROYAL WEST SUSSEX HOSPITAL, Chichester. (334 Beds.) Applications are invited for the appointment of RESIDENT SURGICAL OFFICER (B1). Salary at the rate of £450 p.a., with full residential emoluments. Suitably qualified R and W practitioners who now hold B2 posts may apply. Those holding B1 posts can be considered only if they have been declined by the R.A.M.C.

Applications should be addressed to—

K. H. WILLIAMS, House Governor and Secretary.

ROYAL WEST SUSSEX HOSPITAL, Chichester. Applications are invited from registered medical practitioners for the appointment of CASUALTY OFFICER AND HOUSE SURGEON (A). Appointment is for 6 months from date of appointment. Salary £150 p.a., with residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply.

Applications, stating age, qualifications with dates, and nationality, supported by copies of 3 recent testimonials, should be sent to the House Governor and Secretary.

KENT COUNTY OPHTHALMIC AND AURAL HOSPITAL, MAIDSTONE. (158 Beds.) Applications are invited from registered medical practitioners for the appointment of HOUSE SURGEON (B1) to the Ear, Nose, and Throat Department, vacant 14th November, 1944. Applicants should have held house appointments and had experience in this specialty. The Hospital is fully recognised by the Examining Board for the D.L.O. Salary is at the rate of £350 p.a., with full residential emoluments. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners holding B1 and rejected by the R.A.M.C., may apply.

Applications, stating age, qualifications with dates, copies of testimonials, nationality, and present post, should be sent without delay to: JOHN W. STRICKLAND, F.H.A., Secretary.

EXMINSTER HOSPITAL, Exminster. Applications are invited from registered medical practitioners, Male and Female, for the following appointment. This Hospital has 220 Beds and is a Fracture A Centre. There are also 30 Beds devoted to the treatment of Peripheral Nerve Injuries:—

RESIDENT HOUSE SURGEON (B2). The salary is at the rate of £200 p.a., with full residential emoluments. R and W practitioners who now hold A posts may apply, when appointment will be limited to 6 months; otherwise it can be for a period of 1 year.

Applications, stating age, qualifications with dates, and nationality, and accompanied by copies of recent testimonials, should be sent as soon as possible to the Medical Superintendent, Exminster Hospital, Exminster, near Exeter, Devon.

JOINT COMMITTEE OF THE COUNTY COUNCILS OF DURHAM AND NORTHUMBERLAND AND THE COUNTY BOROUGH COUNCILS OF GATESHEAD AND NEWCASTLE UPON TYNE. ASSISTANT VENEREAL DISEASES MEDICAL OFFICER (Temporary). Applications are invited from Male medical practitioners with experience in the diagnosis and treatment of venereal diseases for the above whole-time appointment. Duties include the investigation and treatment of male and female out-patients and in-patients under the general direction of the Clinical Medical Officer. Salary £500 p.a., rising by annual increments of £25 to a maximum of £700 p.a., plus cost-of-living bonus at present £49 8s. p.a. The appointment is terminable by 1 month's notice on either side and is subject to the provisions of the Local Government Superannuation Act, 1937. The successful applicant will be required to pass the necessary medical examination. Candidates should submit with their applications full information as to liability for military service, medical fitness, and position as regards deferment.

Applications, stating age, nationality, qualifications, special experience in venereal diseases work and other branches of medicine or public health, together with copies of testimonials or references, to be forwarded not later than 11th November, 1944, to the Medical Officer of Health, Town Hall, Newcastle upon Tyne, 1, from whom further particulars may be obtained.

THE ROYAL SHEFFIELD INFIRMARY AND HOSPITAL. Applications are invited from registered medical practitioners (Male and Female) for the appointments of 2 MEDICAL CLINICAL ASSISTANTS (B1), now vacant. Applicants should have held house appointments and had medical experience. Salary is at the rate of £300 p.a., rising by £50 p.a. to £400 p.a., plus war bonus (Men £57 4s. p.a., Women £44 4s. p.a.), non-resident. One of the posts will be associated with the Neurological Unit. Suitably qualified R and W practitioners holding B2 appointments, also R practitioners now holding B1 and rejected by the R.A.M.C., may apply.

Applications, with copies of testimonials, should be sent forthwith to the General Superintendent at The Royal Infirmary, Sheffield, 6.

16th October, 1944.

LUTON CHILDREN'S HOSPITAL, London-road, Luton. Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (B2), vacant about 1st December. Salary at the rate of £200 p.a., with full residential emoluments. R and W practitioners who now hold A posts may apply, when the appointment will be limited to 6 months; otherwise may be renewed for a further period of 6 months.

Applications to be received not later than 15th November, and to be addressed to: BART MILNER, House Governor.

CAMBORNE-REDRUTH MINERS' AND GENERAL HOSPITAL, REDRUTH, CORNWALL. Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (A). Salary at the rate of £200 p.a., with the usual residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Applications, together with copies of 3 testimonials, to be addressed to: J. C. FIELD, Secretary-Superintendent.

Redruth, October, 1944.

MANCHESTER ROYAL EYE HOSPITAL. Applications are invited from registered medical practitioners, Male and Female, for the appointment of HOUSE SURGEON (A), vacant in November. Salary at the rate of £120 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Applications, stating age, qualifications, nationality, and accompanied by copies of 3 recent testimonials, should be sent to: H. R. NORTH, General Superintendent.

LINCOLN COUNTY HOSPITAL. (Voluntary Hospital— 200 Beds.) Applications are invited from registered practitioners for the appointment of SENIOR HOUSE SURGEON (B1), vacant 1st December, 1944. Applicants should have held house appointments and had surgical experience. Salary is at the rate of £325 p.a. Suitably qualified R practitioners holding B2 appointments, also those holding B1 and rejected by the R.A.M.C., may apply.

Applications, stating age, nationality, qualifications with dates, experience and details of previous appointments, and accompanied by copies of 3 recent testimonials, should be sent to: ARTHUR MOORE, Secretary-Superintendent.

Lincoln, 23rd October, 1944.

VICTORIA HOSPITAL, Burnley. (169 Beds.) Applications are invited from registered medical practitioners for the appointment of 2 HOUSE SURGEONS (A). Salary at the rate of £150 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may also apply, when appointment will be for a period of 6 months.

Applications should be sent to: J. E. WHEATCROFT, Secretary.

SURREY COUNTY COUNCIL. St. Helier County Hospital, CARSHALTON. (862 Beds.) Applications are invited from registered medical practitioners, Male and Female, for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER (B2). Salary at the rate of £250 p.a., plus full residential emoluments. Duties to be mainly in Pædiatric Unit, 120 Beds. R and W practitioners now holding A posts may apply, when the appointments will be limited to 6 months; otherwise not to exceed 1 year, and subject to 1 month's notice on either side.

Apply to Medical Superintendent as soon as possible.

SURREY COUNTY COUNCIL. St. Helier County Hospital, CARSHALTON. (862 Beds.) Applications are invited from registered practitioners, Male and Female, for the appointment of CASUALTY OFFICER (B2). The salary is at the rate of £250 p.a., plus full residential emoluments. R and W practitioners who now hold A posts may apply, when the appointment will be limited to 6 months; otherwise will not exceed 1 year.

Apply to the Medical Superintendent by 8th November, 1944.

YORK COUNTY HOSPITAL. (222 Beds.) Applications are invited, from registered medical practitioners, Male or Female, for the appointment as HOUSE SURGEON (A), now vacant, whose main duties are in the Eye, Ear, Nose, and Throat Department (37 Beds, with busy Out-patient Clinics), but who will share in the general work of the Hospital, also Casualty duty. Salary is at the rate of £175 p.a., with full residential emoluments. This post is recognised for D.O.M.A. and D.L.O. examinations. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Applications to be sent immediately to—

J. R. MACKRILL, Secretary.

THE LADY CHICHESTER HOSPITAL (Incorp.), Aldrington HOUSE, NEW CHURCH-ROAD, HOVE. (54 Beds.) HOUSE PHYSICIAN (A) (Male or Female) required. Salary at the rate of £200 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointment will be for a period of 6 months.

Apply, with copies of testimonials, to the Secretary.

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THE ROYAL GWENT HOSPITAL, Newport, Mon. (255 Beds, 130 E.M.S. Beds.) Applications are invited from registered medical practitioners for the following appointments:—

CASUALTY OFFICER (B2), vacant 1st December, 1944. Salary at the rate of £210 p.a.

HOUSE PHYSICIAN (B2), vacant 4th January, 1945. Salary at the rate of £210 p.a. (Duties will include attendance in the V.D. Department of the Hospital, which is recognised by the Ministry of Health for a special certificate.)

R and W practitioners who now hold A posts may apply, when the appointments will be limited to 6 months.

SECOND HOUSE SURGEON (A), vacant 29th January, 1945. Salary at the rate of £175 p.a.

THIRD HOUSE SURGEON (A), vacant 20th January, 1945. Salary at the rate of £175 p.a.

Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when the appointments will be for a period of 6 months.

The salary is as stated in each case, with full residential emoluments.

Applications, stating age, nationality, qualifications with dates, and details of previous appointments, accompanied by 3 recent testimonials, should be sent as soon as possible to—

ALAN RUDDLE, Secretary-Superintendent.

23rd October, 1944.

CITY OF PLYMOUTH. Didworthy Sanatorium, South Brent, DEVON. (140 Beds.) Applications are invited from registered medical practitioners, Male and Female, for the appointment of NON-RESIDENT ASSISTANT MEDICAL OFFICER OF HEALTH for the above Sanatorium. The salary scale is £500, rising by £25 annually to £700 p.a. Previous service on this salary scale, under another local authority, will be reckoned in calculating the appropriate salary of the officer appointed. All fees received by the officer must be refunded to the Council. Preference will be given to candidates with some experience in the treatment of pulmonary tuberculosis. The person appointed will be required to work under the direct supervision of the Medical Superintendent. The appointment is subject to the provisions of the Local Government Superannuation Act, 1937, and terminable by 3 months' notice on either side at any time, and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications, and experience, together with copies of 3 recent testimonials, should be sent to the undersigned as soon as possible. The consent of the Minister of Health has been obtained to the making of this appointment.

T. PEIRSON, Medical Officer of Health.

Seven Trees, Lipson-road, Plymouth.

ROYAL BUCKINGHAMSHIRE HOSPITAL, Aylesbury. (150 Beds.) Applications are invited from registered medical practitioners, Male and Female, for the following posts, vacant on or about 1st January, 1945:—

SENIOR HOUSE SURGEON (B2). The salary is at the rate of £180 p.a., with full residential emoluments. Opportunities afforded to work with London consultants. R and W practitioners who now hold A posts may apply, when the appointment will be limited to 6 months.

HOUSE SURGEON (A) and HOUSE PHYSICIAN (A). Salary for each post is at the rate of £120 p.a., with full residential emoluments. Opportunities afforded to work with London consultants, and to undertake duties, according to the post held, in all branches of medical and surgical practice, including anæsthesia. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when appointments will be for a period of 6 months.

Applications, together with copies of 2 recent testimonials, to be sent immediately and not later than 15th November, 1944, to: F. G. DAWES, Secretary-Superintendent.

COUNTY COUNCIL OF THE WEST RIDING OF YORKSHIRE. STAINCLIFFE COUNTY HOSPITAL, DEWSBURY. (349 Beds.) Applications are invited from registered medical practitioners, Male only, for the appointment of RESIDENT MEDICAL OFFICER (A). Salary is at the rate of £120 p.a., with full residential emoluments. Practitioners within 3 months of qualification and liable under the National Service Acts may apply, when the appointment will be for a period of 6 months; otherwise a period not exceeding 1 year.

BERNARD KENYON, Clerk of the County Council.

County Hall, Wakefield, October, 1944.

SOUTHERN RHODESIA MEDICAL SERVICE. Government MEDICAL SERVICE. Applications are invited from fully qualified Women doctors for appointment as GOVERNMENT SCHOOL MEDICAL OFFICER in the Southern Rhodesia Medical Service. Salary will be on the scale £600 p.a., rising by annual increases of £25 to £900 p.a. Salary will commence from the date of assumption of duty in Southern Rhodesia. Previous experience of school work is desirable. The successful applicant will be required to sign an agreement for 3 years' service in the first instance. A free steamship passage to Cape Town and first-class railway ticket thence to Southern Rhodesia will be provided. Canvassing, either directly or indirectly, will disqualify applicants.

Applications, stating age, qualifications, and experience, together with copies of testimonials, should reach the Official Secretary, Office of the High Commissioner, Rhodesia House, 429, Strand, London, W.C.2 (from whom further particulars and application form may be obtained), not later than 20th November, 1944.

SALFORD ROYAL HOSPITAL. The Board is about to appoint an HONORARY CONSULTANT ADVISER IN HYGIENE.

Application should be made to the General Superintendent at the Hospital from whom full particulars may be obtained.

Appointments — CHARTERHOUSE RHEUMATISM CLINIC. Physicians interested in Rheumatism required for part-time duties, who are willing to attend at Branch Clinic at Ilford.—Apply Secretary, 56–60, Weymouth-street, W.1.

COUNTY BOROUGH OF DEWSBURY. With the consent of the Minister of Health, applications are invited from registered medical practitioners (either sex) for the appointment of TEMPORARY ASSISTANT MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER. The salary is £500 p.a., rising by annual increments of £25 to a maximum of £700, plus present cost-of-living bonus. In fixing the commencing salary, the Committee will consider previous experience.

Further particulars, and application form, may be obtained from the Medical Officer of Health, Municipal Buildings, Dewsbury, to whom completed forms should be returned as soon as possible.

Town Hall, Dewsbury. HOLLAND BOOTH, Town Clerk.

Applications are invited from Male registered medical practitioners for the full-time post of ASSISTANT MEDICAL OFFICER to FORD MOTOR COMPANY LIMITED, DAGENHAM. Applicants should be of British nationality and under 40 years of age. The successful candidate will be required to undergo a medical examination, to work under the supervision of the Medical Officer, and to live locally. Salary £66 13s. 4d. per month.

Applications, stating age, qualifications, experience, and position under the National Service Acts, should be forwarded to the Secretary of the Company, to arrive not later than Saturday, 25th November, 1944.

Wanted, 1st January, 1945, Assistant in Town and Country Practice in West Suffolk. Three in firm. For further particulars apply to: Address, No. 502, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Doctors, Male and Female, required for Locums and Assistantships. Vacancies for Hospital Locums and Ships' Surgeons. Practices and Partnerships for disposal.—Write: A. SHAW, Medical Transfer Agent, Premier Buildings, 88, Church-street, Liverpool.

Part-time Assistantship wanted, London or near, surgery or clinic. Experience G.P., hospital. No midwifery.—Address, No. 500, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Temporary Laboratory Technician required immediately at Bodmin EMERGENCY AND MENTAL HOSPITALS. Salary £300 per year.

Applications, with testimonials, to the Medical Superintendent, Cornwall Mental Hospital, Bodmin.

Required, position of Nurse-Receptionist, possibly combining some secretarial work, with West End or North Surrey practice. Applicant fully qualified B.R.C.S. Nurse, 5 years' hospital experience, and highest testimonials.—Address, No. 509, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Doctor's Widow, 52, with nursing experience and ability, requires post as Housekeeper-Receptionist to doctor. Engaged National work but release imminent. Excellent references. London area preferred. Appointment any time.—Write: Address, No. 497, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Lady Doctor living in the Lake District has vacancy for Resident Patient. Approved by Board of Control.—Address, No. 503, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Medical Practice for disposal, death vacancy Liverpool. Working-class area. Panel approximately 2300 units. Good scope. Further particulars write: A. SHAW, Medical Transfer Agency, Premier Buildings, 88, Church-street, Liverpool, 1. Telephones: Royal 8116 and Royal 7480. Telegrams: "Organic," Liverpool.

Surgeon, Lancashire, selling General Practice, devoting whole time consulting surgical work 31st March, 1945. Practice established over 50 years. Well organised, high standard work maintained. Cash receipts excess £10,000 p.a. Surgeries, modern, well situated and equipped, recently redecorated. Panel 2400, several transferable appointments. Excellent hospital, nursing-home facilities. Incoming man should be good general practitioner particularly interested medicine, anæsthetics, midwifery. Excellent opportunity really keen, efficient man, or 2 good men, or man and wife. All records available inspection. Further details in confidence on application. Terms by arrangement. Introduction given.—Write, Address No. 508, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

For immediate disposal, General Medical Practice, London (including small panel), conducted on modern evolutionary research lines. No other applicant would be suited. Normal terms; personal introduction recommended.—Address, No. 463, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Typewriting: Medical, Scientific Papers, Lectures, Theses, Books. Mrs. SIMMS, 2, Greystones-crescent, Sheffield. COUNTRY ACCOMMODATION, HOLIDAYS, ISLE OF MAN. Write for particulars.

Urgently required, Motor-car. Low mileage, any horse power.—Write full particulars and price to: Advertiser, Box 420, SELLS LTD., Brettenham House, Strand, W.C.2.

Psychological supervision during convalescence. A maximum of 6 patients can be accommodated in physician's home with 10 acres of ground extending to Thames bank. 10 guineas weekly. —Apply Secretary, Weir Cottage, Chertsey. Tel. 2135.

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